

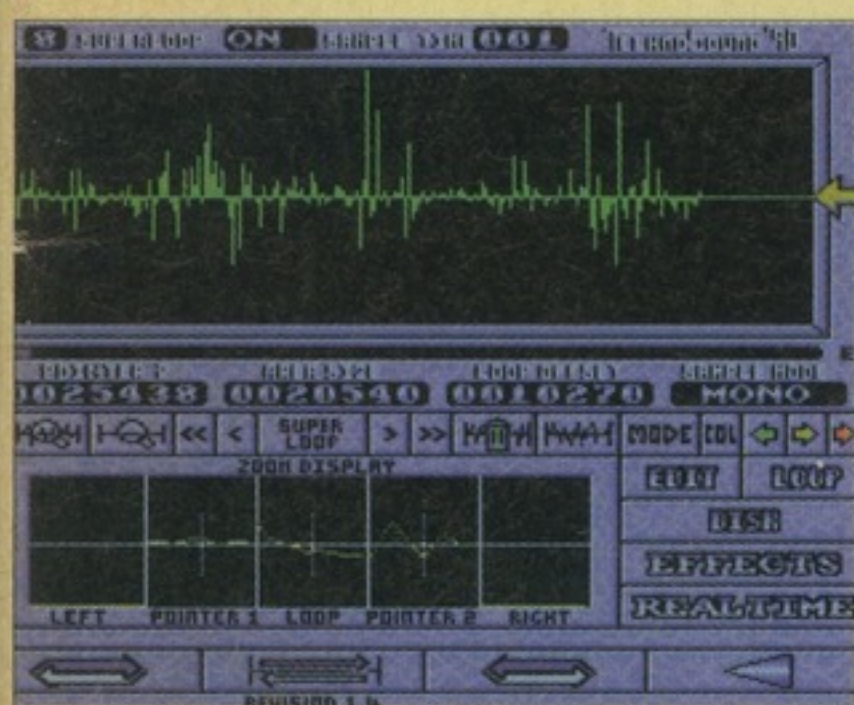
**TONS OF
TIPS**
FOR YOUR
MACHINE
see pages
16-25,
31-33,
44-45

Issue 144 • 10th August 1991 • 88p

COMPUTER *EXPRESS*

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

AMIGA



ENHANCE IT!

How to make the best
sound even better

ATARI



THE CD-I ST!

Is a new generation
all set to appear?

GAMES



ARMALYTE

Gunning for glory?

NOW YOUR PC CAN BE A MAC!

Is this the *ultimate* emulator?

Full exclusive details on page 5

PLUS!



OH NO!!!

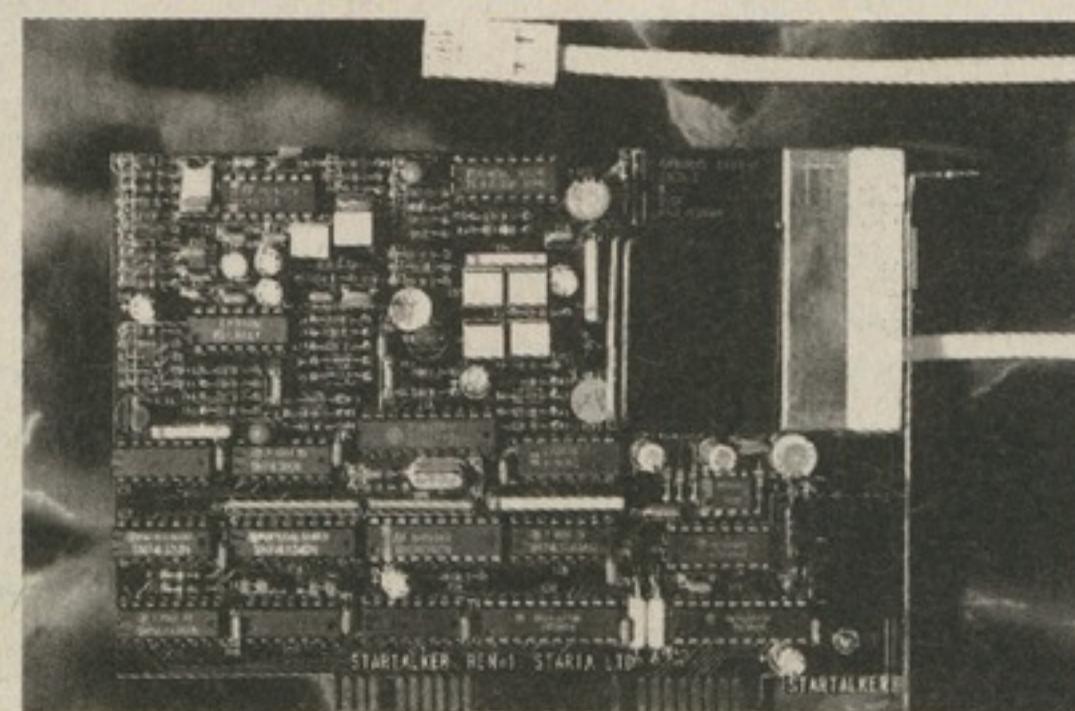
IT'S NCUBE2!

The world's fastest
machine somehow
just got even faster!

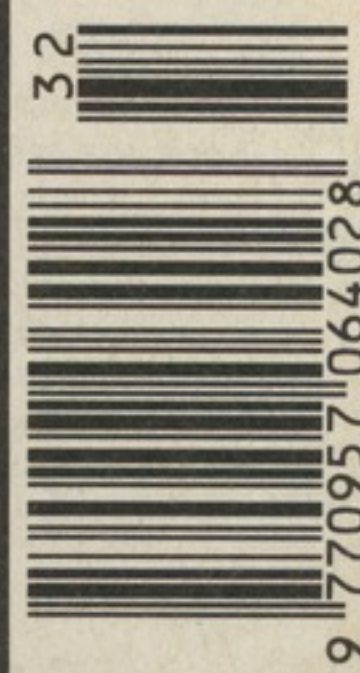


Why this man knows you
better than the back of
your hand — p55

STARTALKER



A PC card that answers
your phone — p53



future
PUBLISHING

Your guarantee of value

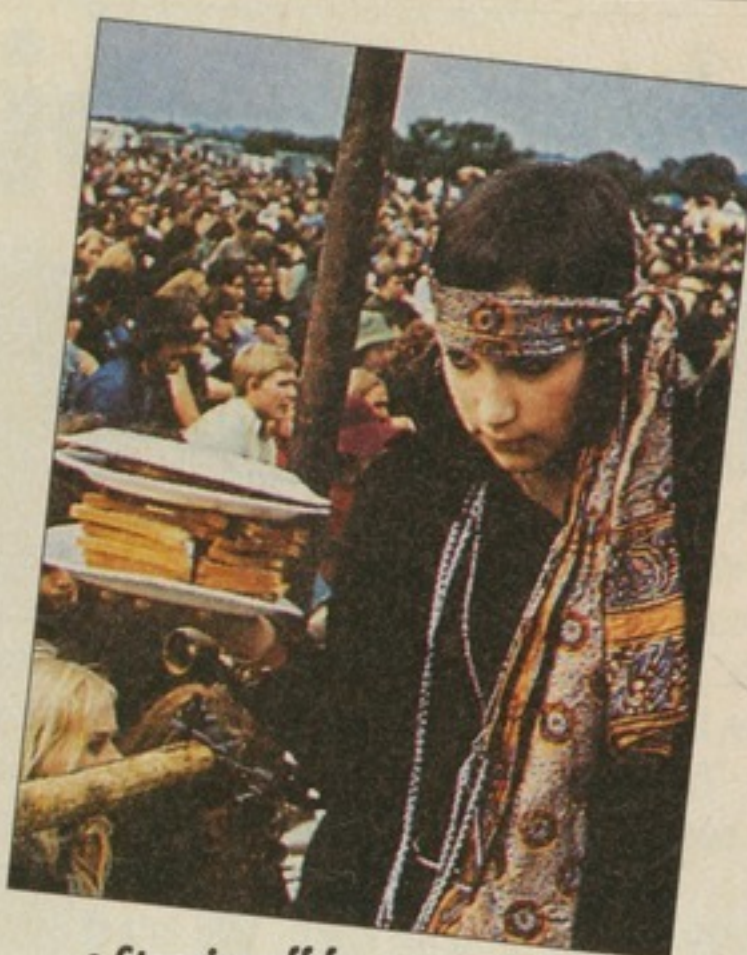
If you're going to San Francisco...

You can wear flowers in your hair if you like, but a more constructive action would be to stop off for a cup of coffee and a quick download.

Yes, Frisco is reverting to the dream of Apple founder, Steve Jobs, who wanted computing for all. A new on-line service has been set-up to cater for the "bohemian set". At least that is the case if you believe SF Net's

instigator, Wayne Georgi. He has placed a number of modem tables in coffee bars around the Frisco area.

The tables feature modems and monitors which rise up when a lever is pulled. Users pay \$1 to log-in while supping their cappuccino. The system features live chat lines, message boards, E-Mail and even a 'Love Connections' area! ■



• Stopping off for a coffee and a bite to eat could turn into an on-line, love, peace and downloading experience.

SHOOT FROM THE LIP

"The PC and workstation worlds are converging. Out of this fusion, a new type of product will emerge - the RISC personal computer."

Edward R McCracken, CEO of Silicon Graphics making bold predictions for the future. Silicon has just announced the launch of its own "low cost" RISC machine. For more details see page 5.

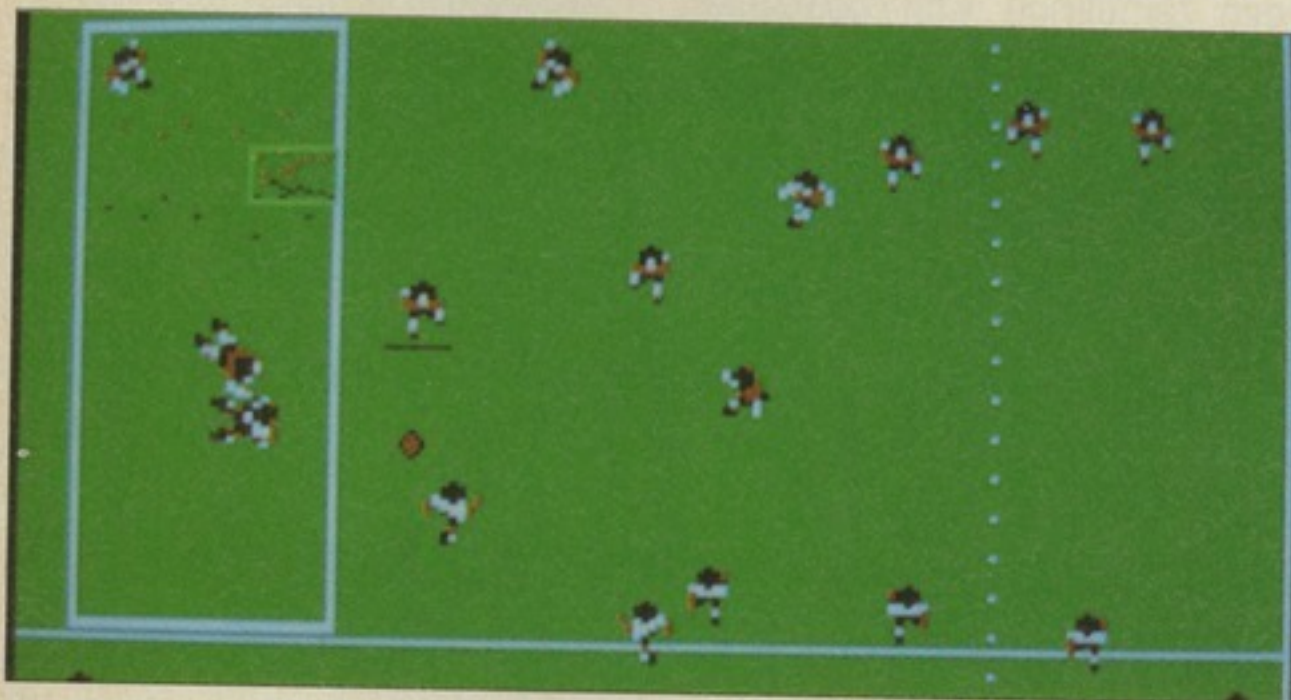
"Over the years, particularly around the time of going public, Virgin has gained a lot of discipline and the sort of management controls that Sega imposes are really not that different to the ones imposed by Virgin." Nick Alexander, ex-of Virgin Mastertronic, now of Sega Europe on possible culture clashes since the Japanese

company took over Virgin.

"The Virgin image (of 'alternative zaniness') is greatly exaggerated. Richard Branson doesn't come around saying 'take that tie off and do something silly.'" The same Mr Alexander talking of the good old days. Both quotes from Computer Trade Weekly.

"In the future there will be record stores where you plug a band's video into your virtual reality machine and you can interact with it." Steve Ghee of VR specialists Division Ltd commenting in the Guardian on the horrors that might await fans of Des O'Connor, Colour Me Bad or Danni Minogue.

RUCKING HELL! Flame game



If you have got over the shock of seeing English rugby union reduced to a tattered remnant of its former glory after the drubbing it received from Australia, then you might be interested in a new game from Domark.

Rugby - The World Cup will be emerging from the Domark scrum in September, just in time for the World Cup in October. It features a Kick Off-like top down view, 16 international teams, passing, tackling and kicking, the ball that is. ■

The Japanese have developed a new advertising gimmick in the form of a talking flame.

The Voice Poppy Light is a picture of a flame with integrated circuit sensors and a voice synth. Up to 32 seconds of sound or voice messages can be stored on the IC and these are played if a human comes into close proximity.

Don't expect to see it replacing moving plant pots yet as it costs about £330 a unit. ■



The next time you tuck into a box of chocs you may be shocked to see a cherry rising up from the soft centres, or a hazle nut popping out of the hard. The reason for this is that an American company is experimenting with holograms which it can overlay in the chocolate as it cools. The company is also looking to put cartoons inside lollies

COMPUTER CALAMITIES

Lazy lot! Send your tales of computer-related chaos and catastrophe to Computer Calamities, New Computer Express, 30 Monmouth Street, Bath BA1 2BW and we'll pay a fiver if it's printed.

This week, we felt that we had to make mention of the on going battle between NASA's space shuttle and its computer system. It seem that everytime the shuttle is due to take off, the computers go into 'warped' drive. It happened again on 24 July this year. Cape Kennedy, Florida, was the site. The shuttle Atlantis was the victim. Computer failure in the main engine controller was blamed for the delayed launch. Happily no one was injured. ■

CONTENTS

10 August 1991 • Express 144

COVER FEATURE

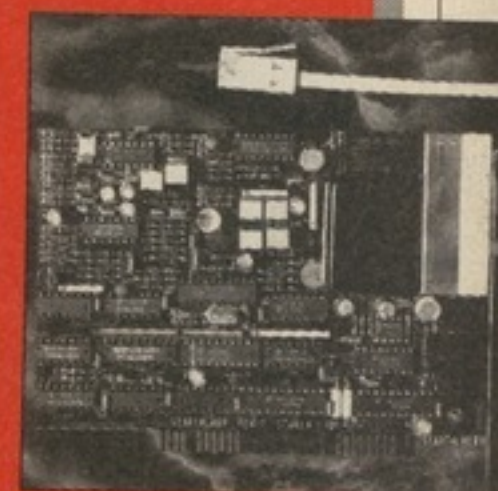
Turn your PC into a Macintosh

Hydra Systems brings us Andor 1 - the first ever Mac emulator for the PC - page 5

REVIEWS

Get your PC to answer the phone

Voice mailing, automatic calling and answering is all possible with the StarTalker card - page 53



FEATURE

He knows you like the back of your hand



Vein checking could be the new method of identifying individuals. But how does it work? see page 55

EVERY WEEK

News - The hottest stories in the industry - pages 4-8

What's New

Printing systems, Football predictor, DTP packages, pocket modems, and an Infra-red mouse - page 10



Games Week

New releases, tips and Armalyte review - page 50

Be the first on your own network!
Win a £570 LAN Station!



Letters	13	Whole Wired	
Amiga	16	World	28
ST	17	Circuit City	31
PC	19	Tech Tips	32
C64	20	Programming	40
Spectrum	22	On-line	42
CPC	23	PD Column	44
Mac	24	Event Horizon	46

A visit to the land of Rod



• Will Rodland be able to repeat the success of previous cutesy games like *Rainbow Islands*?

Rodland is the latest addition to the cutesy platform game genre. It comes from Storm Software, the publishing

house responsible for SWIV.

It is set in a fairy village the inhabitants of which are being changed from pukingly sugary little figures into rabid, rancid demons. This is because, Mom, who usually keeps everything under control, has been kidnapped and is currently residing at the top of the Maboot's Tower.

Mom in this case is the loving parent of the soppingly sweet Tam and Rit. Obviously you have to rescue the dear misspelt woman.

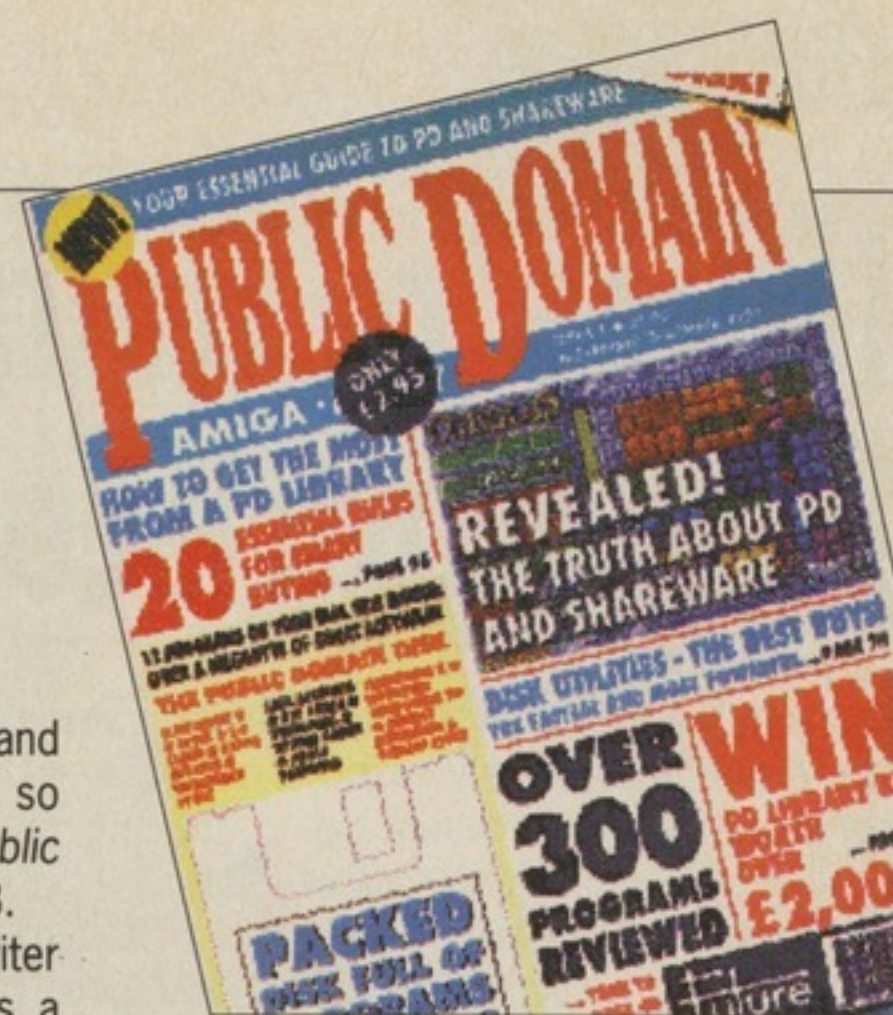
Rodland will cost £25.99 for the Amiga and ST versions, £11.99 on cassette for the C64 and Spectrum and £15.99 on disk for the C64. All will hit the shop shelves in September. ■

Going public

The Public Domain is causing more and more interest these days. So much so that a new magazine called *Public Domain* is to be launched on October 3.

Edited by ex-Amstrad Action writer Adam Waring, *Public Domain* includes a free cover mounted disk, and is packed with the latest on PD for the Amiga, PC and ST.

The aim of the mag is to provide an easy to read, informative guide to the thousands of free PD programs currently



• Can this magazine open the portal of public domain

doing the rounds.

It will cost you £2.95 including disk and will be on sale every other month. ■

Fontasia is what you see

FPC Publishing has launched *Fontasia* for Lotus 1-2-3 users who want to spruce up their spreadsheets.

The second product in the company's WYSIWYG (What You See Is What You Get) series, *Fontasia* offers 15 new professional typefaces and four symbol sets for use with 1-2-3. These include many specialised characters such as mathematical symbols.

Costing £125 for all 15 typefaces, *Fontasia* is available in English, French and German versions. Also available is the first WYSIWYG product *Clip-Artist* which, at £125, contains over 800 clip art images for a wide number of graphics software packages, including 1-2-3, Quattro Plus, Harvard Graphics and WordPerfect.

Contact PC Publishing on 0734 332929. ■



• Spreadsheets have never looked so good, thanks to *Fontasia*

Biggest UK computer-related crime bust

INTERNATIONAL HACKING GANG SMASHED IN UK

Three members of the international hacking gang, 8LGM, have been charged with contravention of the Computer Misuse Act 1984 following the largest computer-related crime bust ever.

The three men, Neil Woods of Oldham, Karl Austin of Liverpool, and Paul Daniel Bedworth of Ilkley were charged and bailed at Bow Street magistrate's court on July 24.

The hackers had allegedly

been tampering with computer systems around the country since August 1990.

The arrests appear to have neutralised the presence of the 8LGM group in the UK

The unnamed operation which netted the triad was a joint affair by Scotland Yard's computer crime squad and BT.

While the arrests have apparently neutralised the presence of 8LGM members in the UK, other affiliates are known to live and work throughout Europe. The gang itself has offered no statement as to what actions it might take.

The case is not expected to come to court for some months, as officers of the Crown Prosecution Service will have to plough through thousands of pages of hard copy which is material to the proceedings. ■

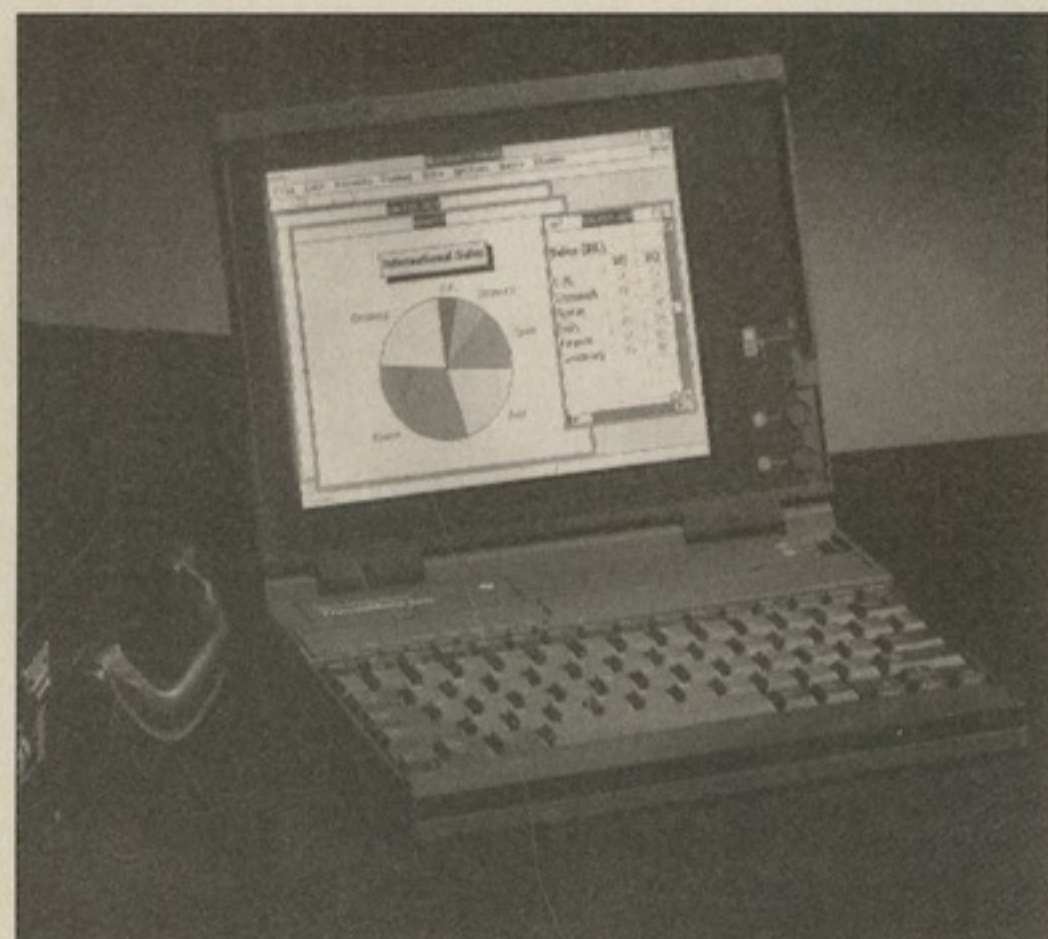
TURBO-COMPILING

To make life easy for ST owning Pascal programmers, HiSoft is launching an upgraded version of its Pascal compiler.

HighSpeed Pascal 1.13 allows ST users to launch programs written in Pascal directly from desktop environments such as GEM without having to revert back to the programming language. HiSoft claims the new version is faster and easier to use than previous versions and is compatible with Turbo Pascal for the PC.

High Speed Pascal 1.13 costs £19.95 For further details of specifications turn to the ST Column on page 17. ■

Sub-£1,000 notebook



• Texas says that it is dropping the price of its 286 notebook to £995 due to a rapidly maturing market

Texas Instruments has announced that its TM2000 notebook is to sell for £995.

The machine weighs 4.4lbs, is VGA compatible with a 10-inch backlit screen, 12Mhz 286 processor, 20Mb slim hard disk and 1Mb of RAM expandable to 4Mb. It also comes complete with Laplink file transfer software.

According to TI, the reduction in price is nothing to do with the recession or the fact that the machine is 286 but because of the 'rapidly maturing market'.

For more information call 0234 270111. ■

Relive the revolution

The man who inspired a million posters on a million student walls is back, and this time he's bringing his computer.

Yes, that's right, Che Guevara, revolutionary leader, poet and martyr returns to haunt all capitalist running dogs in the form of a computer game called *Guerilla in Bolivia*, from CCS of London.

Your role is to do better than Che by not getting killed as you lead 15 hard core rebels across Bolivia.

The game is a strategy adventure and makes use of the great man's diaries beginning on November 7 1966.

History changing stuff? Or a crass political cash-in? Who knows.

However, if you would like to join in with the revolutionary struggle, the game will be on the shop shelves later this year for the Amiga, priced £24.99. ■



• There is a Spectrum haunting the West. So rise up comrades you have nothing to use but your RAM with a new game for the Amiga

'Perfect' Mac emulator for the PC, claims US company

ANYTHING A MAC CAN DO...

COVER FEATURE

If a small US-based firm called Hydra Systems has its way, there may be no point in buying a Macintosh ever again.

Hydra is currently producing the first fully functioning Mac emulator for the PC. And the company claims that its Andor board is capable of running any Mac-compatible software.

The Andor One is to the PC what the SoftPC is to the Mac. It comprises an add-on board and software which enable standard PCs from the XT upwards to run a wide range of Mac software.

APPLE ROMS

In order to get the most from the system users must also purchase Apple ROMs. And this is where Hydra really comes into its own. According to the Gail Wardwell of the company: "We buy Apple Pluses on the open

market, they have used ROMs, and then we install them. Once Apple has sold them, they lose control of them."

Anyone wishing to make use of the Andor One system must have the following: a 3.5-inch disk drive (this can be a standard PC drive and requires no modification), the Andor card itself, 2Mb of RAM and the Apple ROM chipset installed on the card.

NO LIMITS

The Andor card comes with a floppy disk controller which enables the PC drive to act as an Apple drive, reading and writing to Mac format disks.

Once all this has been installed, the user makes use of the supplied software which has so far been tested on programs as diverse as *SuperPaint*, *Microsoft Excel*, and *Photoshop* among others.

Hydra, which is a new company based in San José, California, is claiming that the card can do far more than this. Wardwell says: "Anything that would run on a Macintosh Classic, SE or Plus will work." And anything that runs on these machines will run on the rest of the range.

Installing the Mac software is simplicity itself; the PC's hard disk does not even need to be repartitioned. As soon as the hardware is fitted, programs can be loaded, stored and then run from a hard disk.

LEGAL THREAT

The only fly in the ointment as far as the Andor system reaching the rest of the world is Apple's famed litigious nature. Although no legal action has as yet been taken, Apple is even now in the process of evaluating



• Us company Hydra reckons that it has developed a system which allows PC to run all Mac software.

Andor and the copyright implications.

Price for the board and software is \$995 (approx £585). The Apple ROMs are available from Hydra for \$500 (£294). For more information call Hydra on 0101 408 253 5800. ■

Hi-tech Airlift to Moscow

In a move which mirrors the Berlin airlift of the late 1940s an American company is flying computers into reformers and journalists in Czechoslovakia and the Soviet Union.

The sadly outdated machines are being flown East by Boston-based Computer Exchange. Chief among the recipients is Edvard Shevardnadze, the ex-Soviet foreign minister.

Shevardnadze left the Communist party last year and is now campaigning for the democratisation of the USSR. He commented: "We really appreciate the support as we try to create a democratic forum in the Soviet Union".

The hardware has been donated by NEC, AT&T, Bell Labs, and many other US firms. Air freighting is being carried free of charge by Swissair.

However, this act of processor-based philanthropy comes with a few political strings attached. According to Alex Randall, president of Computer Exchange: "Anyone [in the USSR] with a PC becomes a walking advertisement for the First Amendment of the constitution". ■

White right!

Paper white screens are better for you than amber or green, according to a report written by an associate clinical professor at the University of California.

Dr James E Sheedy compared a 19-inch, monochrome paper white monitor with a 120 dots per inch (dpi) screen resolution and 67Hz screen refresh to an IBM VGA 14-inch mono screen with 640x480 pixel resolution and refresh rate of 60Hz. He

discovered that the former provided 33 per cent more readability.

The professor's findings lead him to the conclusion that a light background is better than a dark one and that: "If we can make video display terminals and hard copy displays identical, then performance will be identical."

So perhaps a return to good old pen and paper could be the answer after all. ■

Philips sells off computer interests

Beleagured Dutch electronics manufacturers Philips has decided to sell of its minicomputing, networking, and document systems to Digital.

Philips, whose Interactive Multimedia side is heavily involved with the development of Compact Disc Interactive technology (CD-I), has commented that its Systems Division which embraces all of these aspects,

has been continuing to perform badly. This lack of performance was becoming "a burden" to the company.

However, it is going to retain its PC manufacturing interests which currently holds 2 per cent of the European market.

The sale, which has not yet been valued, is expected to go ahead in October subject to shareholder approval. ■

Perfect Windows

The long awaited *WordPerfect* for Windows has entered Beta testing stage, with copies being sent to sites world wide, including the UK.

The company has also announced that anyone who buys *WordPerfect* 5.1 for DOS between now and 30 days after the Windows version has been released will be entitled to a free licence to run *WordPerfect* for Windows. ■

Fly an Acorn

The RAF is using 12 interactive flight sim systems based on BBC A3000 computers as part of its travelling recruitment trailers.

Developed by Simis Ltd, which also designed a flight sim for British Aerospace, the system enables youngster to experience what it feels like to fly an RAF Tornado IDS.

Each budding pilot is allowed four minutes to complete one of three pre-defined missions, and also contains a multiple-choice questionnaire sequence on the RAF. ■



• The RAF is hoping to entice youngster to join its ranks by using 12 travelling Tornado flight simulators based on the BBC A3000.

Big investment in IT

Top British businesses are increasing investment in Information Technology (IT) despite the recession, reveals a CBI survey conducted in conjunction with corporate networking specialist SMM Communications.

'The Effectiveness of IT', compiled from a survey of CBI members at board director level, showed that 83 per cent intended to install new IT equipment in the next year. Nearly a fifth revealed

that their current IT expenditure already exceeds £3 million, while a quarter spend at least £100,000 every year. 92 per cent believe their need for IT will increase significantly over the next two years.

The flip side of the coin is that smaller companies are expected to invest less than previously. The report predicts that small businesses will be investing about 13 per cent less on computer systems in the coming year. ■

NIBBLES

FAST raid

Bosses at the York headquarters of the York and County Press have agreed to take steps to reduce software piracy in their offices following an investigation by the Business Software Alliance (BSA) and the Federation Against Software Theft (FAST). In conjunction with Central Point Software, FAST and the BSA were granted an Anton Piller order, which allows copyright holders to inspect premises suspected of illegal copying without prior notice, after receiving a tip off that the York and County Press was using pirated copies of Central Point's PC Tools.

Developers' group

The Developers' Group is a new support organisation set up by The Software Construction Company aimed at software developers. For an annual subscription of £35 members will receive 12 issues of *Computer Language*, a developers' magazine from the US exclusively available in the UK through the new group, as well as details of the group's conferences and seminars, and substantial discounts on software development tools. Tel 0763 244114.

Perfect database

WordPerfect UK has launched an enhanced version of its relational database program DataPerfect. Version 2.2, which costs £359, features a new indexing system and a WordPerfect Office Shell for easier integration with other programs. Improved printing facilities allows for special characters. Contact WordPerfect on (0932) 850500.

No pirates Salford

A Salford software dealer has been fined nearly £20,000 as part of a piracy clampdown by the city's council. Trading standards officers prosecuted the dealer after having seized more than 500 pirated games imported from Hong Kong from his shops. The council is now warning other dealers to check their stock or face heavy fines.

A big dossier

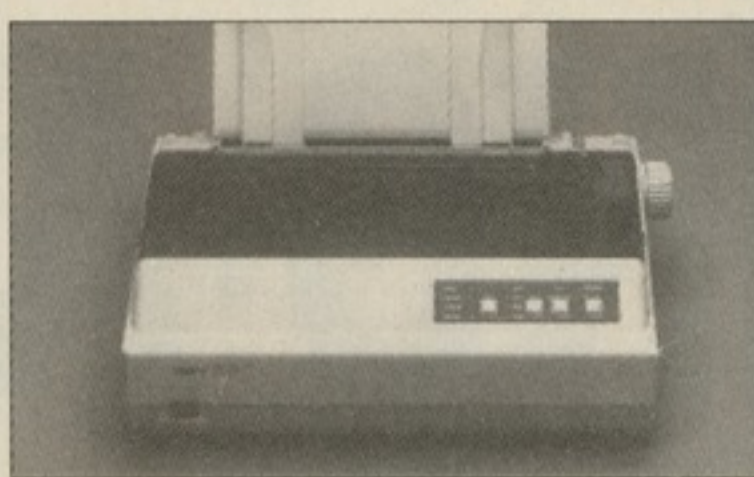
Viglen has upgraded its 32-bit 386SX Dossier notebook. It now features a 60Mb hard disk, a processor speed of 20MHz and 2Mb of RAM, expandable to 8Mb. Supplied with MS DOS 5.0 and Windows 3.0 as standard, Dossier now costs £1,799.

Printing protocol

Star Printer is launching two new printers. The LC-20 and the Pro-to-Col series.

The LC-20 is the upgrade to Star's acclaimed LC-10 series. It is a 9-pin dot matrix machine which comes with eight fonts, print speeds of up to 180 characters per second (cps) in draft Elite, and 45cps in Near Letter Quality (NLQ). It has a 4K print buffer, a built-in parallel/Centronics interface with an optional serial interface, and emulates both Epson and IBM printer standards. Price is £233.82

The Pro-to-Col series of printers comprises four machines. They are 9- and 24-pin printers all coming with colour capabilities. The two 9-pin versions, the wide carriage ZA-2000, and ZA-250 have 32K buffers, expandable to 160K. Star claims the print speeds produced by these machines exceeds 400cps.



• Star reckons that its LC-20 printer is set to be the LC-10 for the 90s.

The two 24-pin machines are the XB24-200 and the XB24-250. Print speeds are 300cps in draft and 100 in NLQ.

Price for the 9-pins is £399 and for the 200 and £499 for the 250. The 24-pins are £499 for the 200 and £599 for the 250.

Call Star on 0895 252131. ■

Home is where the work is

A new report published by Kogan Page claims that 500,000 people in the UK practise full-time 'Teleworking'.

Teleworking: A Strategic Guide for Management also claims that some 1.5 million Britons also work from home. On a part time basis Teleworkers are making more use of digital telephones, modems and personal computers to carry out businesses from their own homes.

It's not only the self-employed who are relying more and more on this form of working practice. Many large companies have taken up the option in order to cut down on overheads and employee insurance. It is estimated that between £500 and £1,000 a year can be saved on each staff member who works from home.

If you are considering setting up at home and would like a copy of *Teleworking: A Strategic Guide for Management*, it costs £18.95 and is available from Kogan Page on 071-278 0433. ■

New workstation claimed to be next stage in computing

RISC 3-D FOR LESS THAN £5K

Silicon Graphics is claiming that its new sub-\$8,000 IRIS Indigo RISC (Reduced Instruction Set Computing) machine can produce the same quality of graphics as its \$50,000 graphics workstation.

This graphics ability was able to produce the startling transformation scenes featured in the forthcoming blockbuster *Terminator 2*.

The Indigo machine costs \$7,995 (£4,702) and comes with both CD-audio and video as well as the ability to produce full 3-D graphics. It makes use of a

MIPS RISC processor and comes with 8Mb of RAM.

According to Silicon's president, Edward McCracken, the Indigo is the first step towards a new step in the evolution of personal computing:

"The PC and workstation worlds are converging," he says, "Out of this fusion, a new type of product will emerge - the RISC personal computer."

FAITHFUL REPRODUCTION

Not only does the Indigo offer high-end graphics capabilities including 3-D rendering but Silicon claims that, with the addi-



• Will the Archimedes one day be seen as the granddaddy of RISC personal computers.

tion of Adobe's Display PostScript system which has already been announced as a supportive product, it gives full What You See Is What You Get

(WYSIWYG). This means that what appears on the screen can be faithfully reproduced on a PostScript-compatible printer.

The launch of IRIS Indigo is also a shot in the arm for the RISC-conscious Advanced Computer Environment (ACE) consortium which numbers Compaq, Digital Equipment, and Silicon Graphics among its members. A low cost RISC workstation/PC is of major strategic value in ACE's battle against Sun Microsystems, Hewlett Packard and the newly-formed IBM/Apple computers joining venture. ■

Anniversary Trek

A bold new Star Trek game is being released by Electronic Arts to celebrate a quarter of a century of the cult show.

Star Trek: The 25th Anniversary is a combination of 3-D space flight simulator and role playing. The plot comprises 14 separate story lines which often cross one another to form a complex scenario. Developer Interplay Productions promises the game will retain the spirit of the program, with 'classic' Trek humour and sound effects digitised from the original television serial.

Star Trek will be available for the PC in October for £34.99 with a Christmas release planned for the Amiga version.

Also new from Electronic Arts in October will be Interplay's *The Bard's Tale Construction Kit* which allows players of



• The new Star Trek game uses digitised graphics of actual models used in the series.

the classic adventure game on the PC to design their own dungeons, monsters and adventures. It will cost £29.99.

Finally, among Electronic Arts' budget releases on its Star Performer label for September will be *Populous*, a game still doing well in the full priced charts. Other new budget titles include *Magic Fly*, *Match Pairs*, *Ski or Die* and *The Immortal*. All will cost £7.99. ■

Honeymoon over for Blue Apple?

Apple and IBM's much vaunted agreement to set up a joint venture appears to be flying into some creative turbulence.

Both companies have agreed, in principle, to commit programming teams to the new company. However, friction is arising from the heavily rumoured choice of team head. The big money is going on David Liddle, president of Metaphor, a company recently taken over by IBM, to be the chief of the 'Blue Apple' venture. Apple appears to believe its commitment to the project is be unrepresented within the top echelons of the joint venture.

A source close to Apple is quoted as saying: "It's very uncomfortable about turning over direction of the new company entirely to someone it has little experience with. This could be a deal breaker". ■

Copycat hacker

An Italian boy calling himself Cracker Jack is currently producing a mixture of concern and derision in the anti-virus community throughout Europe.

The *Virus Bulletin* recently reported that Cracker Jack has been attempting to produce copy cat viruses based on those coded by a Bulgarian known only as the Dark Avenger.

While Jack's attempts at creating digital diseases are a thorn in the side of the authorities, he has one major flaw: he is no good at writing code. According to the *Virus Bulletin*: "If Cracker Jack were a plumber he would have drowned years ago..."

Unhappily the Dark Avenger's viruses remains a danger. ■

Integrated applications

Clarix Corporation is releasing a simple to use integrated software package aimed primarily at occasional and first time Mac users.

ClarixWorks features a word processor plus graphics, spreadsheets, charts, database management and communications applications.

Where it differs from most integrated packages is that you do not have to quit from one application before using another as it gives users access to all the available tools from all applications for use in a document at any time. "*ClarixWorks* makes other integrated software look awkward," says Steve Johnson, Clarix' UK managing director. "For some people this will be the only software they will ever need."

Distributed in the UK by Frontline Distribution from this autumn, *ClarixWorks* will cost £195. ■

Hi-Tech court cases

Sophisticated audio-visual and computer equipment is being used to present evidence to jurors in two major cases at London's Chichester Rents, Chancery Lane courtrooms.

Both the County NatWest and Barlow Clowes cases are using three PCs each and a total of 43 monitors capable of displaying video images as well as computer data. The equipment not only speeds up proceedings but also helps the jurors to understand the huge amounts of complicated evidence involved.

Chichester Rents is one of the first court houses in the UK to use such technology. The equipment has been installed by MarCom Presentations on behalf of the Serious Fraud Squad, which also developed the graphical presentation software used in the Barlow Clowes case.

"This type of high-tech equipment saves the court time and leads to a substantial reduction in costs," says Mark Tantam QC, a management consultant with Touche Ross, which is involved in the presentation of the NatWest case.

High speed PC 250 per cent faster than nearest rival NCUBE SMASHES SPEED RECORD

One of the fastest computers in the world has just got faster. 250 per cent faster than its nearest parallel processing rival to be exact.

IBM's Amdahl was the previous record holder for parallel processing with 419 transactions per second to its name. This is now in tatters as Ncube has just attained the almost

unimaginable rate of 1,073 per second! Installed on the machine was Oracle's *Parallel Server 6.2*, a relational database.

A transaction is the term used when comparing large computing systems. Essentially the machines go so fast that standard bench tests could not possibly hope to measure them. Consequently the measurement used is in real terms.

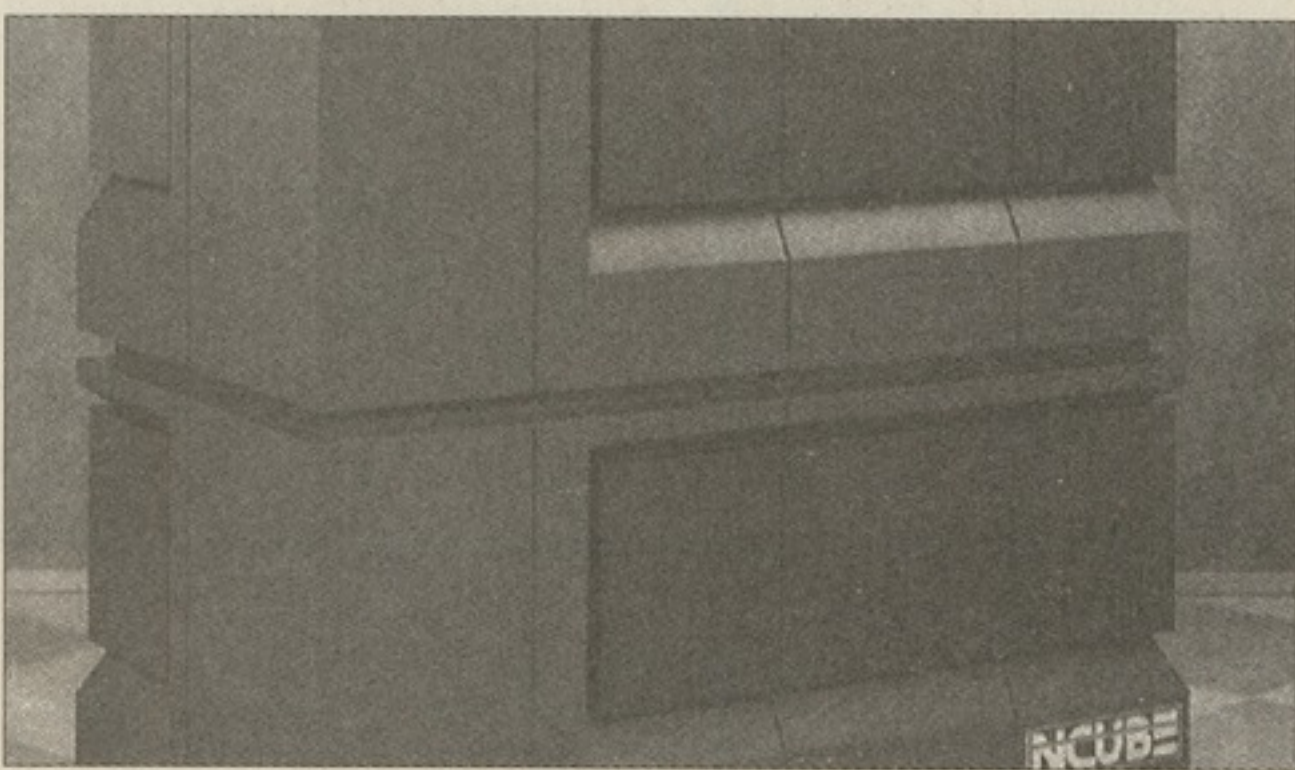
For example, the length of time it takes to complete an account debit in a major bank, transfer the funds, and credit another account.

Ncube 2's transaction comparison involved simulating a major bank with 11,200 clerks managing in excess of 100 million accounts.

The 1,073 tps means more than just speed, though. The

Ncube Corporation is claiming that the cost of each transaction has been brought down to \$2,482 – and this is cheaper than a deskbound, standard PC!

At this price, the Ncube could get through \$2,663,186 worth of work every second. That's \$159,691,160 an hour. Not even BCCI would be able to get through that kind of money in that time. ■



• Ncube can work through \$2,663,186 worth of calculations every second using its 205 disk drives and 500 million MB of memory capacity.

STATS AMAZING!

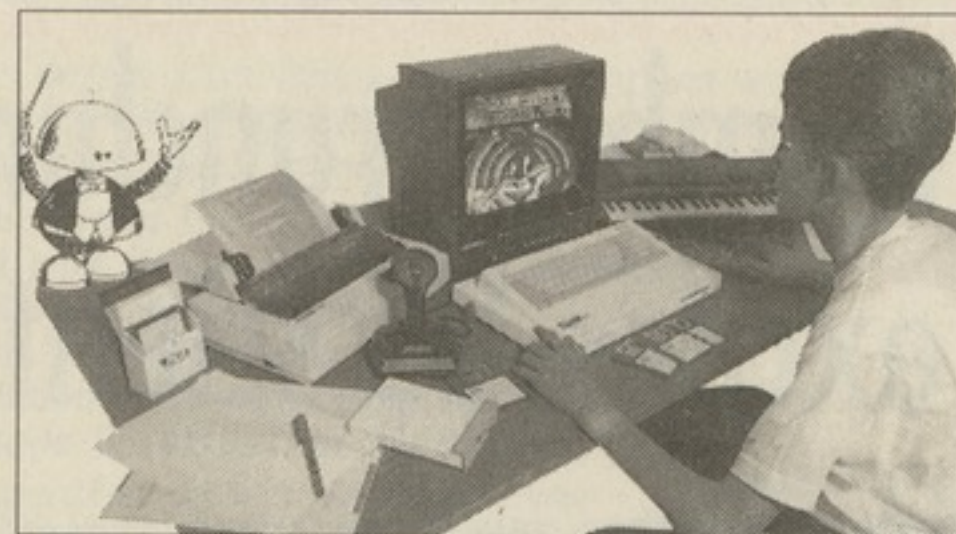
- The Ncube 2 is now up to model 10.
- It has 48 processors used purely to control disk drives
- It has 205 disk drives!
- Although Ncube 2 actually has 8,192 processors, it only used 64 of them for the test.
- A bank using the Ncube 2 could recoup the \$30million the machine cost in just over 11 seconds.
- Ncube 2 has a memory capacity of 500 million Mb. That's 769,230 CD-ROMs.
- Ncube 2 is capable of carrying out 60,000 million instructions per second (MIPS)
- Ncube's \$2,482 per transaction compares to \$50,000-£100,000 per transaction for a standard mainframe computer.

Sam's just like a Spectrum

Lerm software has upgraded its popular Spectrum emulator for the SAM Coupé, SAMTAPE 4, to handle games which have been transferred using the Messenger system.

Messenger is a device which shifts the whole 64K of the Spectrum's memory onto the SAM. SAMTAPE 4 takes these files and changes them to SAMTAPE files, compressing them by up to 50 per cent in the process. Once done, SAM users can customise the programs and insert POKES.

SAMTAPE 4M costs £11.99. Contact Lerm on 091-253 3615. ■



• Transferring Speccy games to a SAM-compatible format has never been easier, thanks to SAMTAPE 4M.

Mini-modem for Atari

The Atari Portfolio palmtop PC, has a new modem.

Andest Communications of Milton Keynes has announced the tiny piece of comms hardware. It runs at 300 and 1200 bits-per-second (bps) and supports VT52, VT100, and Teletype emulations. Kermit, Xmodem, and plain ASCII files transfers are also available. It costs £399.95. For more information, call 0908 263300. ■

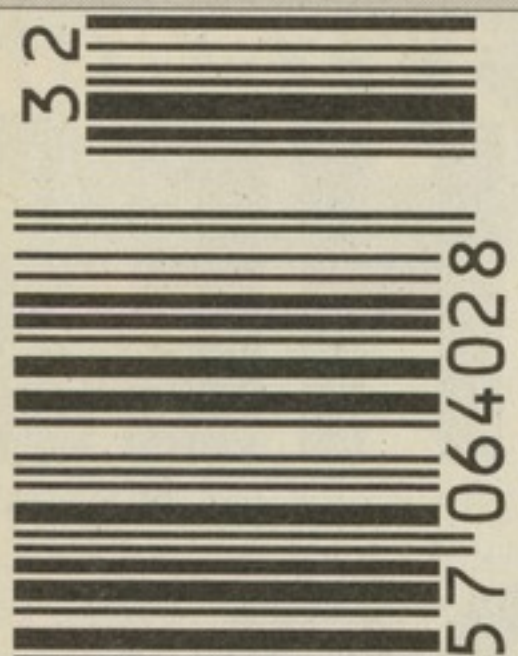


• The Serious Fraud Squad has developed software for computer presentations in court cases.

"The use of graphics improves presentation of material so that juries can understand the complex information more easily," he added. ■

Gross-ery?

IBM and Videocart Inc have entered an alliance to create interactive grocery carts in the US. The carts come with computer linked screens which relay information on best prices, advertising and sales messages. The messages are triggered off by strategically placed nodes around the stores. The initial production run is for 120,000 display units and software support. ■



**The much loved, and aesthetically pleasing Express barcode could soon be for the chop. But does the technology which is set to achieve this feat also provide ID cards for people?*

Barcodes check out

Just when we were all growing used to those unsightly barcodes which obscure the fronts of magazines, books, boxes of chocolates and even packets of sausages, it would appear that their days are numbered.

A company called Dallas Semiconductor has come up with a non-volatile chip which can be stuck to any surface and which can be read by computer.

The chip, titled the DS199X Touch Memory, has been described by DS' product manager, Rick Hall, as a "... silicon self-stick note" - in other words it is a smart Post-It note.

The information which could potentially be stored on these chips could be far more in-depth than is currently available with barcodes. Not only could date, identification number and price be easily readable by devices which cost a mere \$25 to construct, data such as the name of the last person who checked the product, what checks were carried out, and what the expiry date is can also be made available.

The digital barcodes come in tiny 'containers' which measure 16mm, come with a sealed lid and are called Microcans.

Touch Memory chips are presently capable of storing 4K of information. That is roughly equivalent to 4096 characters. Another step-up from bar codes is the fact that the data on the chips can be re-written whenever necessary.

The implications for these devices go much further than simple product information however. Dallas Semiconductors has described uses such as hospital bedside testing, and entry control devices. Of course, the chips are also small enough to make handy identification badges which could be sewn into clothing or attached to credit-card sized ID passes.

With 4K of easily rewritable data at the ready, such cards could contain a wealth of information on individuals. ■

TOMORROW'S CUTTING EDGE

Why wade through musty old journals of scientific factS in the hope of finding the next development in computing, when you can get it right here and now?

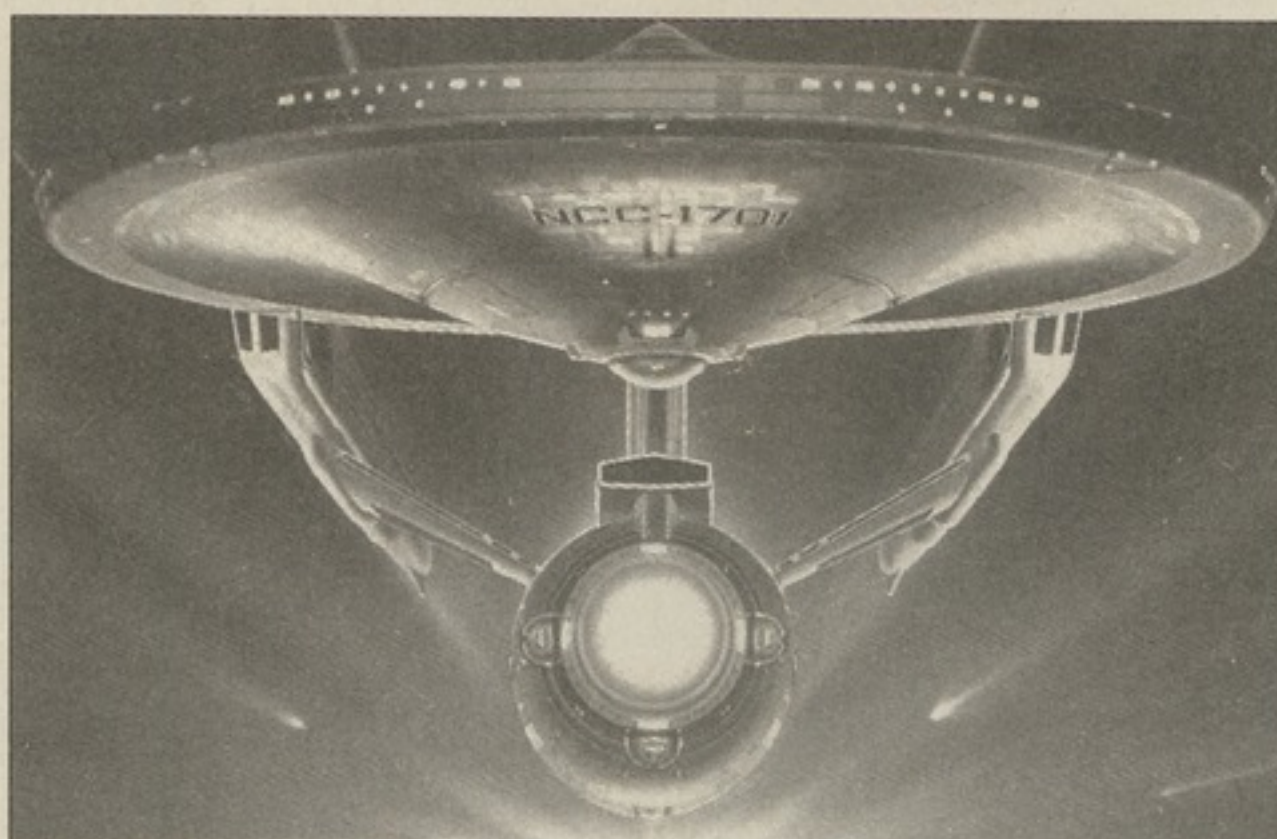
Warp factor loads!

A company called Terra Computing in the States is claiming that its latest development, a general purpose supercomputer, could process data travelling faster than the speed of light.

The American firm is already claiming that the machine, the development of which is co-funded by the Defense (sic) Research Projects Agency (DARPA), will run 100 times faster than latter day machines. It will cost an estimated \$30 million - DARPA is contributing \$7 million.

The proposed specifications are startling to say the least:

- 64-bit shared memory parallel processing
- Up to 256 separate processors.
- Each processor to have a peak potential in excess one billion instructions per second.
- Like Matsushita's Adenart processor (see Top of the Flops), it will also produce



• She can take it Captain! She's staying together! She's staying together! Light speed is too slow for computer makers now but SOME think they can overcome it with software.

a billion floating point operations per second.

The company, however, is encountering some problems with the development of its monster machine. One minor detail is the speed of light, or rather the sloth of light.

Electronic signals cannot, as yet, travel any faster than light.

So, Terra is working on software which will enable developers to add more processors and spread the information processing across them with greater efficiency. According to Terra, the software, combined with shared memory processing, will make faster-than-light processing a feasible proposition. ■

Top of the Flops

It is becoming less realistic to call Matsushita 'the Japanese electronics giants'. The company has simply grown too big for this description, and as if just to prove this point, it is currently working on a massive project.

The new project is a 20 Gigaflop (that's 20 billion floating point operations a second) parallel processor.

The system is already named 'The Adenart' and is said to include as a basic component, Matsushita's 64-bit RISC (reduced instruction set computing) processor, Omega. This in itself comes with 256 different working parts and is said to be eight times faster than other such microprocessors.

The development on the new Adenart processor has not stopped with the attainment of this incredible speed. The Japanese, as expected, are already looking into ways of making it smaller and faster. ■

Hanging on the telephone

Until now you had probably not noticed one of the major problems with telephone boxes - they stand still. Well now, this 'problem' has been solved.

Mobile phone boxes could be littering the highways of the world within the next few years because the Japanese have developed solar powered versions. As the new boxes need no connected power source, they can be stationed anywhere. ■

Number crunching excites US scientists

Database sorting might not appear to be the most cutting of edge subjects, however, it has excited a number of US scientists of late. They have discovered a new technique which could change the way computers deal with numbers in the future.

Dr Michael L Fredman of the University of California, and Dr Dan E Willard of State University of New York claim that their discovery contradicts the received knowledge gained over the last 30 years.

Essentially they have produced a new algorithm which not only speeds up data processing, but improves its performance as the database grows.

The 'Fusion Tree' technique

does away with traditional methods of sorting - these involve comparing two numbers at a time. Essentially Fusion Tree enables a computer to compare one number to 'many' numbers at the same time.

The story of the discovery follows the lines of many scientific finds. Like DNA and Penicillin, it came about as an accident. Fredman says: "We stumbled across this while attempting to solve another data retrieval problem".

Users of databases should not hold their breaths waiting for the commercial application of Fusion Tree. The basic algorithm is still in the theoretical stages and is not likely to be seen underpinning Lotus 1-2-3 or its like for a few of years yet. ■

Talking pages

An organisation called Interleaf is claiming that the documents of the future will be able to read themselves to us.

David D Weinberger, of Interleaf, made the statement in the latest issue of American magazine, *The Futurist*. And he went on to say more.

Hard copy documents will also be able to adapt their contents to meet the needs of the person reading them. For example, an architect reading a city guide will have more graphics of buildings, and more text relating to their specialised interest automatically presented to them than to an historian consulting the same guide.

Interleaf does not seem to be making idle promises. At Comdex it showed off a prototype of such a document. However, this smart document was still computer-based and required 4Mb of RAM, a Macintosh or 386-based PC to run it. ■



• Before too long, War and Peace, The Good Food Guide, and even The Beano could be reading themselves to you. However, they could also be reading the bits which they think you'll appreciate.



CITIZEN

PRINTERS

Silica presents some great offers on the award winning range of high quality dot matrix printers from Citizen. Each Citizen printer is built in the UK to exacting standards, ensuring superb reliability and a very high quality of output. Our confidence in the quality of Citizen printers is such that we are pleased to offer a unique two year guarantee with every printer. Plus, if you purchase your Citizen printer from us, we will give you a Silica Printer Starter Kit (worth £29.95), **FREE OF CHARGE!**

FREE DELIVERY

Next Day - Anywhere in the UK mainland

FREE STARTER KIT

Worth £29.95 - With every Citizen printer from Silica.

FREE COLOUR KIT

Worth £39.95 - With Swift 9 and Swift 24 printers.

2 YEAR WARRANTY

Silica offer a 2 year warranty (including the printer head) with every Citizen printer purchased from Silica.

WINDOWS 3.0

Free Windows 3.0 driver - In the Silica Starter Kit.

FREE HELPLINE

Technical support helpline open during office hours.

MADE IN THE UK

Citizen printers are manufactured to high standards.

144 CPS DRAFT 9 PIN



CITIZEN 120D+

The Citizen 120D+ is one of the UK's best selling printers. It has a stylish appearance and excellent features and performance for such an inexpensive printer. The 120D+ is available with either a serial or parallel interface and is an ideal first printer.

- 9-pin Printhead
- Print Speed 144cps Draft
- 30cps NLQ
- Epson & IBM Graphics Emulation
- Pull Tractor & Bottom Feed
- Superior Graphics - 240x216dpi
- FREE Starter Kit

RRP £233.83

STARTER KIT £29.95

TOTAL RRP: £263.78

SAVING: £112.20

SILICA PRICE: £151.58

£129

+VAT = £151.58

144 CPS DRAFT 24 PIN



CITIZEN 124D

The award winning Citizen 124D brings high quality 24-pin dot matrix printing within every computer users reach. It is the ideal choice where high quality printing is required at a budget price.

- 24-pin Impact Printer
- Print Speed 144cps Draft
- 2 LQ Fonts (48cps)
- 8K Buffer
- Epson, IBM & NEC P6+ Emulation
- Advanced Paper Parking
- Superior Graphics - 360x360dpi
- FREE Starter Kit

RRP £292.58

STARTER KIT £29.95

TOTAL RRP: £322.53

SAVING: £112.20

SILICA PRICE: £210.33

£179

+VAT = £210.33

192 CPS DRAFT 9 PIN



SWIFT 9 - COLOUR!

The Citizen Swift 9 is perfect for those who require high quality dot matrix black or colour printing at a budget price. The print quality of Swift 9 rivals that of other manufacturer's 24-pin models.

- 9-pin Impact Printer
- Print Speed 192cps Draft
- 3 NLQ Fonts (48cps)
- 8K Buffer
- Epson & IBM Graphics Emulation
- Advanced Paper Parking
- FREE Starter Kit
- FREE Colour Kit

RRP £280.83

STARTER KIT £29.95

COLOUR KIT £44.65

TOTAL RRP: £355.43

SAVING: £133.35

SILICA PRICE: £222.08

£189

+VAT = £222.08

192 CPS DRAFT 24 PIN



SWIFT 24 - COLOUR!

The Citizen Swift 24 is one of Europe's best selling printers and has won awards including Printer Of The Year 1990. Its rapid print speed, quality and black or colour options, make it a natural choice.

- 24-pin Impact Printer
- Print Speed 192cps Draft
- 4 NLQ Fonts (64cps)
- 8K Buffer
- Epson, IBM & NEC P6+ Emulation
- Advanced Paper Parking
- FREE Starter Kit
- FREE Colour Kit

RRP £428.88

STARTER KIT £29.95

COLOUR KIT £44.65

TOTAL RRP: £503.48

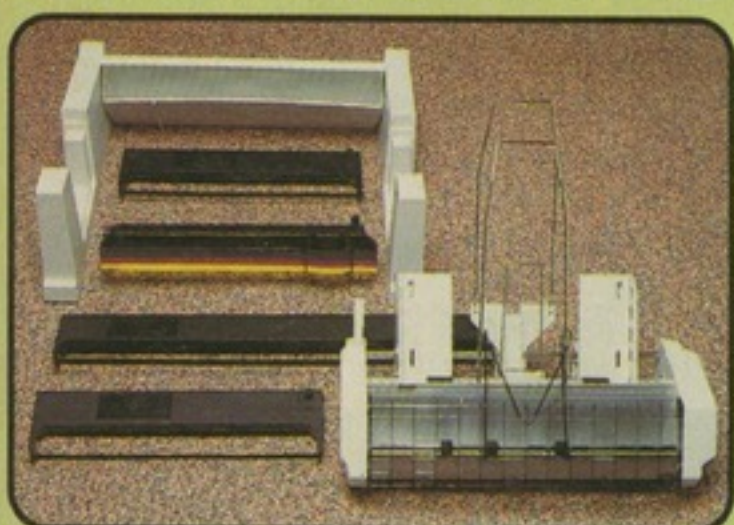
SAVING: £199.15

SILICA PRICE: £304.33

£259

+VAT = £304.33

PRINTER ACCESSORIES



SHEET FEEDERS

PRA1200	120D	£71.38
PRA1215	124D/Swift 9/24	£88.70
PRA1228	124D/Swift 9/24	£42.00

SERIAL INTERFACES

PRA1189	120D+	£56.45
PRA1209	Swift 9/124D	£32.25
PRA1709	Swift 24	£26.38

PRINTER STAND

PRA1242	124D/Swift 9/24	£24.03
---------	-----------------	--------

ORIGINAL RIBBONS

RIB 3520	120D/Swift 9 Black	£4.11
RIB 3924	124D/Swift 24 Black	£4.70
RIB 3936	Swift 9/24 Colour	£15.63

COLOUR KITS

PRA1236	Swift 9/24	£39.65
---------	------------	--------

All prices include VAT and Free delivery.

FREE! STARTER KIT

Every Citizen printer from Silica, comes complete with the Silica Printer Starter Kit, including everything you need to get up and running with your new printer immediately, **FREE OF CHARGE!**

- 3 1/2" Dual Format Disk with Amiga & ST Printer Drivers
- 3 1/2" Disk with Drivers for Microsoft Windows 3
- 2 Metre Parallel Printer Cable
- 200 Sheets of High Quality Continuous Paper
- 200 Continuous Address Labels on Tractor Feed
- 5 Continuous Envelopes on Tractor Feed

If you already own a printer, and would like a Silica Printer Starter Kit, you may order one (ref: KIT 5000) for the special Silica price of £24.95 - £5 off RRP!

NORMAL RRP
£29.95



SILICA SYSTEMS OFFERS YOU

- **FREE OVERNIGHT COURIER DELIVERY:** On all hardware orders shipped in the UK.
- **TECHNICAL SUPPORT HELPLINE:** Team of PC technical experts at your service.
- **PRICE MATCH:** We normally match competitors on a "Same product - Same price" basis.
- **ESTABLISHED 12 YEARS:** Proven track record in professional computer sales.
- **£13M TURNOVER (with 60 staff):** Solid and reliable with maintained growth.
- **BUSINESS/EDUCATION/GOVERNMENT:** Volume discounts available for large orders.
- **SHOWROOMS:** Demonstration and training facilities at our London & Sidcup branches.
- **THE FULL STOCK RANGE:** All of your PC requirements from one supplier.
- **FREE CATALOGUES:** Will be mailed to you with offers and software/peripheral details.
- **PAYMENT:** By cash, cheque and all major credit cards.

Before you decide when to buy your new printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or some technical help and advice. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is one of the UK's leading independent computer dealers and provides a quality service to users at home, in education and in business throughout the nation. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature on the Citizen printer range and begin to experience the "Silica Systems Service".

SILICA SYSTEMS



MAIL ORDER:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	Tel: 081-309 1111
Order Lines Open: Mon-Sat 9.00am-6.00pm	No Late Night Opening	Fax No: 081-308 0608
LONDON SHOP:	52 Tottenham Court Road, London, W1P 0BA	Tel: 071-580 4000
Opening Hours: Mon-Sat 9.30am-6.00pm	No Late Night Opening	Fax No: 071-323 4737
LONDON SHOP:	Selfridges (1st Floor), Oxford Street, London, W1A 1AB	Tel: 071-629 1234
Opening Hours: Mon-Sat 9.30am-6.00pm	Late Night: Thursday until 8pm	Extension: 3914
SIDCUP SHOP:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	Tel: 081-302 8811
Opening Hours: Mon-Sat 9.00am-5.30pm	Late Night: Friday until 7pm	Fax No: 081-309 0017

To: Silica Systems, Dept NCE 0891 - 55, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND CITIZEN PRINTER INFORMATION

Mr/Ms/Ms: Initials: Surname:

Address:

Postcode:

Tel (Home): Tel (Work):

Company Name (if applicable):

Which computer(s), if any, do you own?

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

Take a good tip

PRODUCT: Football results predictor
NAME: Poolsmaster
COMPATIBILITY: PC, PCW, CPC, ST, Amiga, C64/128 and Spectrum

So you want to get rich quick? Need to know where to put your crosses on the pools coupons? Then Intraset Ltd reckons it has the answer with the latest upgrade of its football results prediction program, *Poolsmaster*.

According to Intraset, the program has helped many punters win thousands of pounds over the last three seasons, and has the testimonials to prove it.

The new version has been updated to cater for the increased use of non league tables such as the Vauxhall Conference and the Vauxhall Open Premier. It also now features a 'fixtures spooler' which automatically repeats its predictions when you feed in the actual results, to save you having to check them out yourself.

Intraset has also released a book written by the same people who provided the formula on which *Poolsmaster* is based. *Guide to Pools and Perms* (£14.95) passes on the company's pools experts knowledge, and in conjunction with *Poolsmaster* forms a formidable winning team.

Price: £24.95
Availability: Now
Target users: Every gambling-loving computer user
Contact: Intraset: 02572 78600
Perceived competition: Sidmouth Software's *Tipster*.

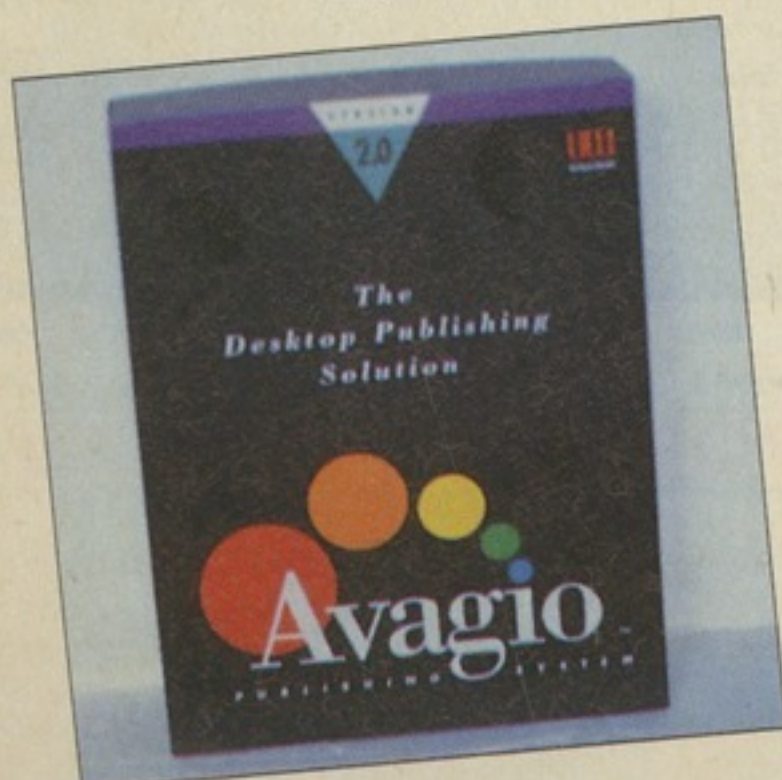
Low cost DTP

PRODUCT: DTP package
NAME: Avagio 2
COMPATIBILITY: 286 PCs and above

Avagio 2 for the PC has bought some very impressive Desktop Publishing (DTP) features well within financial reach of enthusiasts and home users.

For less than £150, Avagio 2 offers text rotation, text which flows around curves and other irregular object, hinting on small type to produce sharper images, enhanced drawing facilities to produce polygons, curved shapes and bezier curves and colour printing.

It also includes 12 new fonts which are scalable up to 999 point and can be turned into hard copy



• The latest version of Avagio offers 12 fonts scalable up to 999 point size and sectional printing which makes it ideal for posters.

WHAT'S NEW

The *Express* at-a-glance, no frills, no nonsense product guide gives you the low down on low cost DTP, infra-red mice, a designer T-shirt printer and more...

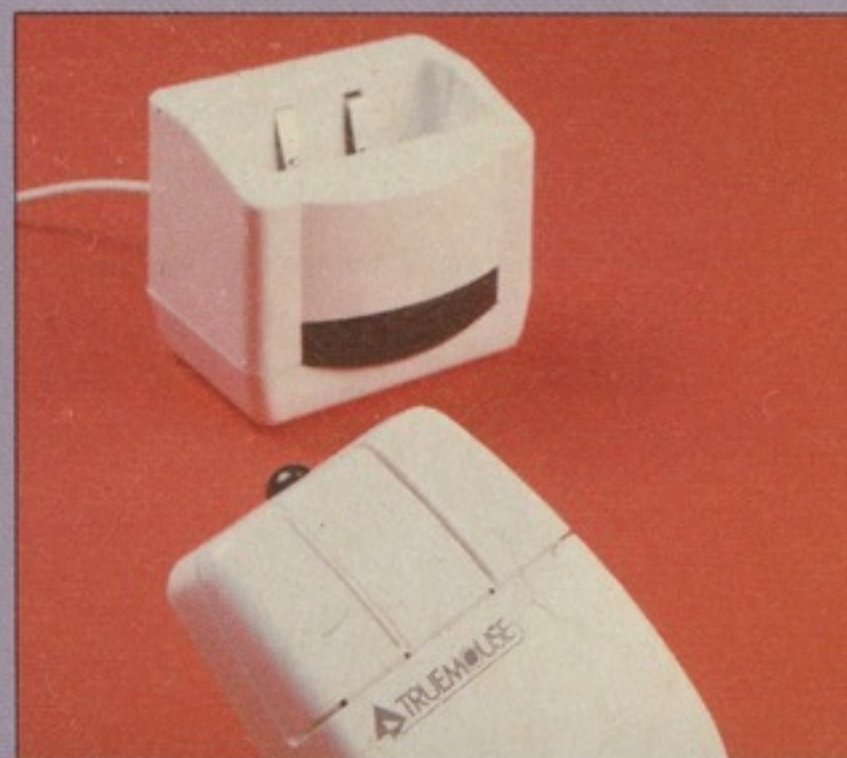
Remote control

PRODUCT: Infra-red mouse
NAME: Wireless Truemouse
COMPATIBILITY: PC

Wire can be a nuisance, and unfortunately computers use lots of them. How often has the wire on your mouse become hooked up with the keyboard lead, stuck under the corner of your CPU or even entangled with your telephone flex? The wireless PC Truemouse from Evesham Micros could be the solution.

Based on an infra-red system, the wireless Truemouse has a range of up to three metres at an angle of up to plus or minus 45 degrees. It comes with an infra-red receiving unit which plugs into the serial port of the PC. This unit also acts as a recharging device for the mouse, which can run for up to 10 hours fully charged.

The wireless mouse is, according to the company, more than just a gimmick and is capable of everything you would expect from a sophisticated traditional mouse; it has a switchable resolution - ie the higher the resolution the smoother the cursor moves on the screen - and a tracking



• With the new Wireless Truemouse you can control your cursor from up to three metres away from your PC.

speed of 700mm/sec.

Built and designed in Taiwan, Evesham Micros is one of the first companies in the world to market the device, and is expecting to have versions for the Atari and ST available in September.

Price: £49.95
Availability: Now
Target users: All PC users
Contact: Evesham Micros: (0386) 765500
Perceived competition: Logitech's wireless mouse

on any type of printer. Scaling and sectional printing makes it possible to print large posters in parts on an A4 printer or to save any part of a page - graphical or textual - as a graphic. A print to disk facility allows you to send a document to a typesetter on disk.

Using its own Graphical User Interface (GUI) Avagio 2 needs MS DOS 3.1 to run on a 286 or above.

Price: £141
Availability: Now
Target users: Businesses, clubs and groups that print newsletters, people producing fanzines

Contact: LTS: 0386 793147
Perceived competition: Timeworks, PagePlus, Deskpress, Jetsetter.

Concept printing

PRODUCT: Computer designed textile printer system
NAME: Concept II Heat Transfer System
COMPATIBILITY: PC

Computers have helped solve the problem of T-shirts with designs that either crack or fade the first time you wash them.

Concept II Research has developed a system using Mitsubishi colour thermal printers to print computer generated full colour designs on virtually any fabric, from cotton and knitted textiles to paper.

The system has been developed primarily for short order runs, where silk screen printing would be hideously

expensive, and traditional heat transfer often produces unsatisfactory results. It is ideal for trendy, designer T-shirts not intended for mass production. It will also print on overhead projection acetates.

Concept II chose the Mitsubishi thermal printer because it uses a variety of inkroll which could be easily adapted for use in the transfer process. It can produce designs up to A3 size at a resolution of 300 dots per inch (dpi).

The printing system can be bought on its own for around £3,000, or as a part of a complete design system, including Computer Aided Design (CAD) software, colour scanner, PC, 20-inch monitor and graphics tablet for around £19,000.

Price: £3,000
Availability: Now
Target users: Specialised, non-mass production textile and design companies

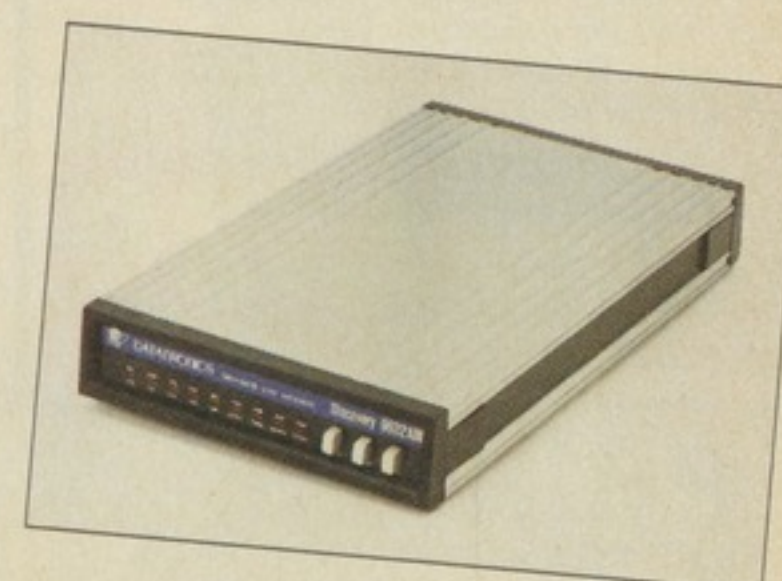
Contact: Concept II Research: 0438 313936
Perceived competition: None

Getting on baud

PRODUCT: Modems
NAME: 2496PF and 9632AM
COMPATIBILITY: PC

As part of a revamp of its entire modem range, Digital Matrix Ltd has launched two new units.

The 2496PF pocket modem is a V21/22/22bis device with built-in fax facilities which operate at 9600 bits per second (group III).



• Datatronics' new 9632AM external modem featuring password security and leased line capabilities is one of two new modems from the company.

About the size of a couple of packs of playing cards the 2496PF runs on an internal 9V battery, with a mains adaptor is available as an option for £10. The modem features are compatible with all Hayes standard packages, while the bundle comes with ABC software for the fax facilities.

The 9632AM external V32 modem for desktop users features MNP Class 5 and V42 error correction resulting in a maximum through-put of 19,200 bits per second (bps).

Operating at speeds from V21 to V32 it also includes password security to stop just anybody using it, and leased line capabilities.

Price: 2496PF: £330
9632AM: £553
Availability: Now
Target users: PC comms enthusiasts
Contact: Digital Matrix Ltd: 021-722 3234
Perceived competition: Comparable Worldport desktop and portable modems. ■



WITH 1Mb RAM

NEW! CARTOON CLASSICS PACK

HARDWARE:

512K AMIGA 500	£329.99
A520 TV MODULATOR	FREE
A501 RAM EXPANSION	£99.99

SOFTWARE - ENTERTAINMENT

BART SIMPSON	£24.99
CAPT PLANET & PLANETEERS	£25.99
LEMMINGS	£25.99

SOFTWARE - PRODUCTIVITY

DELUXE PAINT III	£79.99
PLUS! FREE FROM SILICA	
ARCADE ACTION PACK	£229.78
PHOTON PAINT 2.0	£89.95

TOTAL RRP: £906.67

YOU SAVE: £507.67

£399

PLUS! 16 NIGHTS FREE HOLIDAY ACCOMMODATION

SILICA PRICE - INC VAT + FREE DELIVERY



AMIGA

STAND-ALONE 500 COMPUTER

- 512K AMIGA £329.99
- TV MODULATOR FREE
- MOUSE CONTROLLER FREE

PLUS! - FREE FROM SILICA

- ARCADE ACTION PACK £229.78
- PHOTON PAINT 2.0 £89.95

TOTAL RRP: £649.72

YOU SAVE: £320.72

SILICA PRICE: £329

PLUS! FREE HOLIDAY ACCOMMODATION

£329

SILICA PRICE - INCLUDES VAT + FREE DELIVERY

FREE! FROM WITH SILICA EVERY

ARCADE ACTION PACK

The new Arcade Action Games Pack is THE software compendium for Amiga owners, featuring ten top titles with a variety of different types of games for you to enjoy. Each title is packaged in its own plastic case, with a colour sleeve and full instructions. The Arcade Action Pack is FREE! when you buy your Amiga 500 from Silica.

FREE!

WORTH: **£219.78**



ARCADE ACTION GAMES PACK

FREE! PHOTON PAINT 2.0 GRAPHICS PACKAGE

Every Amiga 500 from Silica Systems comes with a FREE Photon Paint 2.0 (RRP £89.95), one of the most advanced art packages available for the Amiga. With it, you will be able to harness the extraordinary graphics power of the Amiga and produce inspirational pictures in minutes. With 4096 colours, your pictures will reach life-like appearance. These can be animated in real-time using a vast range of graphical effects, including blending colours and dithering, stencils, shadowing, contour mapping and surface mapping.

WORTH **£89.95**



FREE! 16 NIGHTS HOLIDAY HOTEL ACCOMMODATION

Every Amiga from Silica comes with a FREE 72 page, full colour brochure with accommodation vouchers. These vouchers entitle 2 people to stay up to 16 nights in one hotel (or any number of hotels to a total of 16 nights) with accommodation FREE (you could take up to six nights for four people, or other options). Choose from the 250 hotels featured in the catalogue. All you have to pay for are your meals (prices are listed in the brochure). Reduced rates in top London hotels and hotels in France are also featured.



AMIGA

TOTAL FREE PACKAGE

ARCADE ACTION PACK - £229.78:

Asterix - By Coktel Vision	£24.99
Chess Player 2150 - By CP Software	£24.95
Drivin' Force - By Digital Magic	£24.95
Live & Let Die - By Elite	£19.99
Onslaught - By Hewson	£24.99
Pipe Mania - By Empire Software	£24.99
Rick Dangerous - By Firebird	£24.99
Rock 'n' Roll - By Rainbow Arts	£19.99
Skweek - By US Gold	£19.99
Trivial Pursuit - By Domark	£19.95

ART PACKAGE - £89.95:

Photon Paint 2.0 - By Micrillusions	£89.95
-------------------------------------	--------

TOTAL RRP: £319.73

FREE!
WORTH
NEARLY:

£320

PLUS! FREE HOLIDAY ACCOMMODATION

SILICA SYSTEMS OFFER YOU

- **FREE OVERNIGHT COURIER DELIVERY:** On all hardware orders shipped in the UK.
- **TECHNICAL SUPPORT HELPLINE:** Team of Amiga technical experts at your service.
- **PRICE MATCH:** We normally match competitors on a "Same product - Same price" basis.
- **ESTABLISHED 12 YEARS:** Proven track record in professional computer sales.
- **BUSINESS + EDUCATION + GOVERNMENT:** Volume discounts available for large orders.
- **SHOWROOMS:** Demonstration and training facilities at our London & Sidcup branches.
- **THE FULL STOCK RANGE:** All of your Amiga requirements from one supplier.
- **FREE CATALOGUES:** Will be mailed to you with offers and software/peripheral details.
- **PAYMENT:** By cash, cheque and all major credit cards.

Before you decide when to buy your new Amiga computer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Amiga, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. We have been established for over 12 years and, with our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature and begin to experience the "Silica Systems Service".

MAIL ORDER HOTLINE
081-309 1111

SILICA SYSTEMS



MAIL ORDER: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-309 1111
Order Lines Open: Mon-Sat 9.00am-6.00pm No Late Night Opening Fax No: 081-308 0608

LONDON SHOP: 52 Tottenham Court Road, London, W1P 0BA Tel: 071-580 4000
Opening Hours: Mon-Sat 9.30am-6.00pm Late Night: Thursday until 8pm Fax No: 071-323 4737

LONDON (SELFRIDGES): 1st Floor, 369 Oxford Street, London, W1A 1AB Tel: 071-629 1234
Opening Hours: Mon-Sat 9.30am-6.00pm Late Night: Thursday until 8pm Ask for extension 3914

SIDCUP SHOP: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-302 8811
Opening Hours: Mon-Sat 9.00am-5.30pm Late Night: Friday until 7pm Fax No: 081-309 0017

To: Silica Systems, Dept NCE 0891 - 60, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND FREE AMIGA COLOUR CATALOGUE

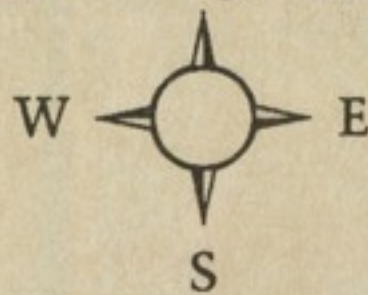
Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode: Tel:

Which computer(s), if any, do you own?

Capital North Ltd.



Present

A 16-Bit

COMPUTER EXHIBITION EXTRAVAGANZA



at the Leeds University Exhibition Centre, Calverley Street, Leeds 2.
Friday, 13th September, 10 a.m.-6 p.m.
Saturday, 14th September, 9 a.m.-8 p.m.
Sunday, 15th September, 10 a.m.-4 p.m.

BE SMART. BE THERE!

**PLUS: Bring your
spare computer
equipment to sell at the
Bring and Buy Counter.
10% Commission.**

★ Car parking for 1200 ★ Refreshments available ★

**See the latest
software &
hardware
Thousands of
bargains.**

Stand Enquiries: **Tel./Fax 0532 677657/610997**



Computermate

TOP PC GAMES

3D CONSTRUCTION KIT.....£39.99	CODENAME ICEMAN.....£34.99	FLIGHT OF THE INTRUDER.....£26.99	LEISURE SUIT LARRY TRILOGY.....£39.99	POPULOUS/SIM CITY (TWIN).....£26.99	TEST DRIVE 3.....£24.99
4D TENNIS.....£27.99	COLONEL'S BEQUEST.....£34.99	FLIGHT SIMULATOR 4.....£39.99	LEMMINGS.....£27.99	POPULOUS PROMISED LANDS.....£12.99	TETRIS.....£20.99
4D BOXING.....£22.99	COLOSSUS CHESS 2.....£20.99	FLIGHT SIMULATOR SCENERY DISKS.....£17.99	LEXICON.....£24.99	PRINCE OF PERSIA.....£23.99	TEAM YANKEE.....£25.99
4D SPORTS DRIVING.....£22.99	COLOSSUS CHESS X.....£20.99	EUROPE, HAWAII, JAPAN EACH.....£13.99	LHX ATTACK CHOPPER.....£26.99	RAILROAD TYCOON.....£27.99	TRACON 2.....£35.99
688 ATTACK SUB.....£25.99	COMMANDO HQ.....£29.99	FOOTBALL DIRECTOR 2.....£17.99	LIFE AND DEATH.....£22.99	RAPCON.....£26.99	TV SPORTS BASKETBALL.....£26.99
A10 TANK KILLER.....£27.99	CONQUEST OF CAMELOT.....£29.99	FRONTLINE.....£24.99	LIFE AND DEATH 2.....£24.99	RED STORM RISING.....£26.99	TRIVIAL PURSUIT.....£20.99
AIRLINE TRANSPORT PILOT.....£34.99	CONSPIRACY.....£27.99	GO.....£22.99	LINKS.....£34.99	RED BARON.....£29.99	ULTIMA 5.....£19.99
ANCIENT ART OF WAR.....£26.99	CORPORATION.....£22.99	GUNSHIP.....£26.99	LINKS-COURSE BOUNTIFUL.....£13.99	RICK DANGEROUS 2.....£20.99	ULTIMA 6.....£26.99
ANCIENT ART OF WAR AT SEA.....£26.99	CUBEWORD 3D CROSSWORD.....£20.99	GUNSHIP 2000.....£32.99	LINKS - COURSE FIRESTONE.....£13.99	RISK.....£20.99	UMS 2.....£32.99
ANCIENT BATTLES.....£24.99	DAS BOOT.....£20.99	HEART OF CHINA.....£30.99	LORD OF THE RINGS.....£29.99	RIDERS OF ROHAN.....£26.99	VULCAN.....£19.99
ARNHEM.....£19.99	DELUXE SCRABBLE.....£20.99	HOYLES BOOK OF GAMES.....£26.99	LIGHTSPEED.....£29.99	RISE OF THE DRAGON.....£34.99	VIRTUAL WORLDS.....£26.99
BALANCE OF POWER 1990.....£19.99	DOUBLE DRAGON 2.....£20.99	HARPOON.....£29.99	M1 TANK PLATOON.....£29.99	RORKES DRIFT.....£22.99	VIRTUAL REALITY.....£29.99
BACK TO THE FUTURE 2.....£22.99	DRAGONS LAIR 2.....£34.99	HEROES QUEST.....£34.99	MARIO ANDRIETTIS RACING.....£24.99	SAVAGE EMPIRE.....£26.99	W. COMMANDER MISSION DISKS.....£26.99
BARDS TALE.....£19.99	DIPLOMACY.....£20.99	HITCHHIKERS GUIDE.....£9.99	MARTIAN DREAMS.....£29.99	SILENT SERVICE 2.....£29.99	1 & 2 EACH.....£13.99
BARDS TALE 3.....£24.99	DUNGEON MASTER.....£32.99	INDIANAPOLIS 500.....£24.99	MAVIS BEACON TYPING.....£27.99	SIM CITY TERRAIN EDITOR.....£12.99	WING COMMANDER.....£26.99
BATTLECHESS.....£22.99	EPIC.....£26.99	ISHIDO.....£26.99	MEGA FORTRESS.....£26.99	SIM CITY ARCH 1.....£12.99	WING COMMANDER 2.....£34.99
BATTLECHESS 2.....£25.99	ELITE PLUS.....£29.99	JACK NICKLAUS GOLF UNLIMITED.....£34.99	MEGA TRAVELLER 1.....£26.99	SIM CITY ARCH 2.....£12.99	CARMEN SANDIEGO.....£26.99
BATTLE OF BRITAIN.....£24.99	EYE OF BEHOLDER.....£26.99	JACK NICKLAUS COURSES.....£34.99	MIDWINTER.....£26.99	SIM EARTH.....£29.99	WHERE IN THE WORLD IS.....£26.99
BALANCE OF THE PLANET.....£29.99	F-15 STRIKE EAGLE 2.....£26.99	VOL 1-5.....@ £11.99 EACH	MIG 29 FULCRUM.....£29.99	SORCERERS.....£24.99	WHERE IN TIME IS.....£26.99
BATMAN.....£19.99	DESERT STORM SCENARIO.....£13.99	- UNLIMITED PLOT DISK.....£13.99	MINDGAMES.....£23.99	SPACE ACE.....£34.99	WHERE IN EUROPE IS.....£26.99
BATTLE COMMAND.....£26.99	F-19 STEALTH FIGHTER.....£29.99	JETFIGHTER II.....£34.99	MONOPOLY USA.....£26.99	SPACE QUEST 1.....£26.99	WHERE IN THE USA IS.....£26.99
BRIDGE PLAYER 2150.....£24.99	F-29 RETALIATOR.....£26.99	JOE MONTANA.....£29.99	MICROPROSE SOCCER.....£19.99	SPACE QUEST 2.....£26.99	WONDERLAND.....£26.99
BLUE MAX.....£26.99	FINAL CONFLICT.....£22.99	KICK OFF 2.....£20.99	MONKEY ISLAND.....£26.99	SPACE QUEST 3.....£30.99	ZORK 1.....£9.99
CAPTIVE.....£26.99	FLIGHT SIM AIRCRAFT &.....£22.99	KINGS QUEST 4.....£29.99	NAM.....£26.99	SPACE QUEST 4.....£30.99	ZORK 2.....£9.99
CASTLES.....£29.99	SCENERY/DESIGNER.....£27.99	KINGS QUEST 5.....£34.99	PGA TOUR GOLF.....£21.99	SPEEDBALL 2.....£22.99	ZORK 3.....£9.99
CHESSE PLAYER 2150.....£22.99	FLIGHT SIM SCENERY.....£22.99	KNIGHTS OF LEGEND.....£22.99	PICTIONARY.....£20.99	SPIRIT OF EXCALIBUR.....£27.99	
CHUCK YEAGERS AIR COMBAT.....£29.99	INSTANT FACILITIES LOCATOR.....£29.99	KNIGHTS OF THE SKY.....£29.99	POLICE QUEST 1.....£24.99	STELLAR 7.....£24.99	
		LEATHER GODDESSES.....£9.99	POLICE QUEST 2.....£29.99	STORMOVIC.....£22.99	
				SUPREMACY.....£26.99	

SPECIAL OFFER - FREE MOUSE MAT
WITH ALL ORDERS OVER £30

All prices include VAT & P&P (UK only)

COMPETITION PRO DIGITAL JOYSTICK + GAMES STARTER PACK.....£39.99	ANALOGUE JOYSTICK AND CARD + GAMES STARTER PACK.....£29.99	EXTERNAL PC SPEAKERS (BATTERIES NOT INCLUDED).....£19.99
COMP PRO DIGITAL JOYSTICK.....£12.99	QUICKSHOT WARRIOR (ANALOGUE).....£12.99	ADLIB MUSIC CARD.....£99.99
COMPETITION PRO CARD.....£19.99	CONTRIVER TRACKBALL.....£34.99	FLIGHT CONTROLLER YOKE.....£49.99
QUICKSHOT ANALOGUE JOYSTICK.....£12.99	SOUNDBLASTER, INCLUDES MIDI INTERFACE, JOYSTICK PORT, POWER AMPLIFIER AND SOFTWARE.....£149.99	INFRA RED MOUSE.....£26.99
QUICKSHOT ANALOGUE CARD.....£12.99		

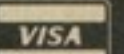


ORDER INFORMATION

Open 8am-8pm Mon-Sat

Call 0707 875757 or Fax 0707 875513

Computermate Supplies, 1 Brookside, South Mimms, Herts EN6 3PT



Post: state
disk size



All prices subject to change without notice. Products offered subject to availability. E & OE.

SHOPPING EXPRESS

CONTENTS

AMIGA	16
ST	17
PC	19
C64	20
SPECTRUM	22
CPC	23
MAC	24
WHOLE WIRED WORLD	28
CIRCUIT CITY	31
TECH TIPS	32
PROGRAMMING	40
EXPRESS ON-LINE	42
THE PD COLUMN	44
THE EVENT HORIZON	46

EXPRESS MAIL

Welcome to letters pages that takes it on the chin!

This week, Haydn Fitz-Williams prints your points on that SICK! cover story - was it all sensationalist gutter press journalism or did it just touch a few raw nerves? And should we be reported to the Press Council? Plus your chance to put a question to top industry figures!

Sick or What?

The subject of pornography highlighted in issue 142 of *NCE* is one which we have given thought to since we started our PD library just over a year ago. During this time we have been offered, by other libraries and individuals, software which we considered contravened the Obscene Publications Act. Software like this can do nothing for the image of computing, PD or anything and to distribute it because it brings in the punters shows what the library bosses have as their main concern.

You ask if any regulatory body could be set up. Well I don't know where you would find anybody willing to do it no matter how much it was needed. How about this for an alternative? -You regularly receive catalogues from

the libraries, as you go through them you should be able to see what sort of service is provided, whether there is porn there or not. If you find a catalogue that appears iffy then send it back to the library with your comments. If the problems are rectified you could then review the library.

There would be quite a scramble I would imagine to get a Future Publishing stamp of approval which you would be able to withdraw if the library let its standards slip or if you got justified complaints about it from users. This in conjunction with a yearly readers vote would really sort out the fly boys from the genuine enthusiasts. I'm not so sure about libraries that don't want a regulatory body - nothing to hide, nothing to fear!

I can't really comment on the operation of BBS except to say that they should have the same

code of practice as the better libraries, constant monitoring of files uploaded and expulsion of users who misuse.

Leigh Caudwell, LAPD, Derbys

I'M SURE you represent just one of the many PD libraries who take a responsible line on this whole issue. Unfortunately, others, particularly some bulletin boards, are not so forthcoming. *Express* has been inundated with mail over the last week from individuals accusing us of biased, sensationalist lies written by 'chimpanzees, simpletons and vipers'. Meanwhile we'll seriously consider your stamp of approval idea.

Press body

I shall be filing a complaint with the Press Council, and would suggest that all BB sysops in the UK who feel aggrieved by your feature should do likewise.

Far from the BBS world needing a regulatory body, as the accompanying leader article says, the press has, once more, shown itself for what it is. It is the press, and putative magazines like *NCE*, that should be regulated by law, not BBS's.

Paul Dickie via Aspects

I CAN'T help feeling you're way off beam here Paul. *Express* has no wish to tarnish all bulletin boards with the same brush. We went out of our way to

disassociate the vast majority of boards and libraries from the few who disseminate porn, piracy, violence and viruses. Turn to that feature again and take a look at 'a few warped people', 'a sick minority' and 'the majority of libraries and bulletin boards are beyond reproach'. Or are you claiming there is no porn, piracy, violence and viruses on offer anywhere?

Attention!

Hi guyz, just a quickie to comment on your article re: PD filth. For what it's worth I agree wholeheartedly with your comments. I think it's definitely something to bring to the attention of computer users; hopefully then it will be marginalised as much as possible (I doubt if it will ever go away).

Steve Orrell via Aspects

THANKS STEVE - far from being sensationalist we attempted to convey the facts as we know them. We have no wish to slag off PD as we believe it's a valuable asset in computing and wish to encourage it. At the same time, it has its flip side. And this needs to be exposed.

But not like that

I was just wondering whether your 'Sun' style crusade against 'Evil influences threaten Public Domain - SICK, shock, horror probe was really just to sell copies of *NCE*.

Without these sort of articles I would only have a vague idea about these sort of things - and I work as an analyst in the PC industry - so how much would the 'kids' you're trying to 'protect' know without the articles you produce?

I wonder how many spent hours trying to find porn, piracy and violence on BBs as a result of your article. If I was trying to promote these I couldn't think of a better way of doing it.

Edward Kenworthy, Swindon Wilts

I KNOW WHAT you're trying to get at, but unfortunately your 'head-in-the-sand' approach isn't a very useful one. I reckon ignoring issues encourages them far more than publicising them.

It's only by reminding people of their responsibilities that they ever get their acts together.

CDTV - Are brown goods the future? (maybe)



I can't help wondering whether the days of the 'computer' are over. It seems that with the emergence of machines like CDTV/CD-I and the range of arcade quality consoles, the need to compute is disappearing.

'Consumer' seems to be the operative word now with machines being specified to allow any ordinary Joe just turn them on and tune in.

Machines like the Mac and Windows on the PC have removed the need for actual programming style inputs and with more and more link ups with video and stereo sound it would seem the all-in-one box in

the lounge is just around the corner.

CDTV is, I reckon, a new kind of invention in this respect and points the way to the future. As your feature proved, anyone can just switch it on and get involved.

When the price comes down to £199 or so and it sells like hot cakes, what will be the point of buying a dedicated computer?

Mark Jefferies, Burslem, Stoke

AH HA! The 'Will everything be brown in the future' debate starts here. You could well be right there, Mark. The whole point behind CDTV and CD-I is to bring the benefits of a computer to the mass consumer without them realising they're using one.

The perceived notion is that the

domestic video is easily the most complex device, over and above the washing machine, that anyone other than bearded, bespectacled boffins ever want to operate, so let's make it real simple.

With a price of around £199 and masses of software 'just like television' rolled into one, 'brown' machines will banish techno-fear forever. Errr...probably.



CDTV - it's Total Vision, not TeleVision!

Brian Chalmers, Burslem, Stoke

TRY TELLING that to our technical editor Keith Pomfret!

ON THE COUCH

This week resident *Express* psycho...err...psychiatrist Dr Clare Anthony takes time out to lay **ANDREW McMINN** of **COLCHESTER** across her leather couch for a spot of frenzied analysis.

All lucky Andrew did was to write in about the machine he owns, the software he loves and the computer he would most like to own. And you could be next! Just send in your details to: **Leather Couch Clare, New Computer Express, 30 Monmouth Street, Bath BA1 2BW.**

OK Andrew, let's get down to business, just lean back and take a deep breath....

- **MACHINE OWNED:**
Commodore 128D
- **FAVOURITE SOFTWARE:**
Leather Goddesses of Phobos
- **DESIRED MACHINE:**
Any 586-based computer

Oh dearie, dearie me. Those *Phobos* women again. You wouldn't believe the number of sessions I've had involving these fatal female fixations. Leather goddesses are, of course, inherently problematic since they exploit a pronounced schism in the male psyche. Namely, the wish to exercise sexual power while simultaneously being chastised for using it. Of course it's a sublimated urge of the oedipal variety.

And, Andrew, since I imagine your mother seldom appears before you dressed in shiny black leather and high heels wielding a whip, your frustrated unconscious seeks other avenues of fulfillment. Enter your Commodore 128. But it seems this particular vehicle is an increasingly insufficient means of escape. Hence the desire for a 586-based computer. And this leads us to another problem. As we Freudians know only too well, 586-based computers have one fundamental flaw. They don't exist.

PROGNOSIS: There is only one solution to such a pronounced fantasy. Sell your Commodore immediately and with the proceeds visit Tangiers and buy a sex change. On returning to the UK, join the police. You will shortly find yourself in the company of other Goddesses for whom a uniform is no small price to pay for a lack of leather.

PC con

How come PC stands for Personal Computer when my dictionary defines personal as close, intimate, etc, and yet PCs are the nastiest, coldest, most heartless and definitely most impersonal machines in the universe.

Not like my lovely BBC which is loving and caring and tends to my every need and whim (almost).

And yet by definition it must be an IPC- an ImPersonal Computer because it isn't a PC. Come on IBM, surely a breach of the trade descriptions act!!!!

John Justice via Aspects

I WAS WITH you all the way there until you mentioned the BBC. I found it just as impersonal as the PC - except when I played *Elite* for 19 hours in one stretch. Oh and by the way, IBM doesn't own copyright on 'PC' - every personal computer is a PC.

ST desktops 1

Great to see the feature on alternative ST desktops. Interestingly enough I once met one of the Tramiels at a show in Germany and he went to great lengths to convince me that Apple nicked some of its front-end from Atari! I can't remember the details now, but I thought Apple was on the block a whole year ahead of the ST. Still, this was when he was talking me through X-windows for the TT which really showed up well what a true GUI should be like.

Alex Carter, Bristol

YEP I'VE seen the UNIX front-end for the TT you're referring to and, apart from the NeXT, it looks to be in a league on its own. As for Apple nicking interface ideas off of Atari - I thought it had 'paid homage' - as they say in film making circles - to Xerox's interface. Still you never know.

Ask a question and win a fiver!

Yep, this is your chance to put your queries to some of the world's leading computer companies. Over the summer, *Express* will be conducting a series of interviews with some of the biggest names in the biz. And we want your contributions! Here's the list of the top manufacturers and developers we'll be talking to:

- Acorn ● Amstrad ● Apple ● Atari ● Commodore ● IBM
- Intel ● Microsoft ● Motorola ● NEC ● NeXT ● Nintendo
- Panasonic ● Philips ● Sega ● Sharp ● Sony ● Tandy

The theme of the series is 'Towards 2000', so we'll be asking the UK bosses of these firms to tell us where they've been, where they're at and where they're going. And along the way there's bound to be an opportunity to ask a lot of niggling little questions you've always wanted answered but never found in print.

So now's your chance to find peace of mind and if we like your question you could win some dosh into the bargain! All you have to do is drop a line to 'Industry Interviews', *New Computer Express*, 30 Monmouth St, Bath BA1 2BW and we'll do the rest. But hurry, we want to get this off the ground as soon as possible!

WANTED!
Your honest opinion of EXPRESS

■ To help us keep improving your favourite magazine, please fill in and return this form

1. How did you buy this issue?

- ☐ I subscribe
- ☐ Newsagent delivered it to my home
- ☐ Asked newsagent to reserve copy
- ☐ Bought it on planned shop visit
- ☐ Just happened to see it and liked it

2. Rate NEW COMPUTER EXPRESS in terms of value for money:

- ☐ Excellent! ☐ Good
- ☐ Reasonable ☐ Poor ☐ Ripoff!

3. Out of ten, how much did this week's cover make you want to look inside?...../10**4. How much does this issue appeal to you overall?...../10****5. How does it compare with previous issues you've seen?**

- ☐ Much better! ☐ Slightly better
- ☐ About the same standard
- ☐ Slightly worse ☐ Much worse!

6. Rate out of ten this and any other computer magazines you read regularly:

NEW COMPUTER EXPRESS...../10

...../10

...../10

7. Out of ten, how useful did you find this week's main feature?

...../10

8. What do you like most and then least about this issue?

I most like

And I least like

Your name and address:*

* Leave blank if you wish - but we may want to send you details of exclusive special offers

- No stamp needed if posted in UK.

Return to: **NCE, Issue 144 Survey, Future Publishing, Freepost, Bath, Avon BA1 2XF.**

ST desktops 2

Thank God there are alternatives to GEM on the ST. It's one of the most annoying pieces of software to use and I find it unbelievable that Atari hasn't really upgraded it in nearly six years. I mean, what's stopping it from updating it? Do Atari execs all use Macs or something?

Andrew Clark, Durham

I MUST ADMIT I gave up with GEM too. I remember when I first used it I was impressed, but it's so far behind the

ease of my Mac it's untrue. Oh and no, Atari execs don't use Macs - they use STs running Mac emulators! At least this is what I'm led to believe by my spies who report that the new Spectre GCR was the most eagerly awaited arrival at Atari UK HQ. Still, it's probably a similar story at Commodore UK too! ■

**Write Now**

Write and tell Haydn Fitz-Williams what you think! Reach him at: **Express Mail, 30 Monmouth Street, Bath BA1 2BW.** Sorry, no personal replies, even with an SAE and remember, only SOME letters win a fiver!

**On-line mail**

Own a modem? Then squirt us a letter. *Express* has its own area on Aspects bulletin board (061 792 0260) where you can leave mail and upload/download files.

We also have our own conference on CIX. Give this on-line service a ring on 081-390 1244 and talk to us direct!

You can also leave E-mail for us on Prestel and Micronet - get in touch on 011112623, or on Telecom Gold @84:txt152

NEW AGE COMPUTING

For all your Amiga & communication needs!

AMIGA 500 DEALS

Before you buy an Amiga from someone else check:
As well as the standard pack, does it have

- * A free mouse mat
- * A free disk head cleaning kit
- * 15 professionally packed public domain disks
- * A complimentary issue of Computer Lynx (See below)?
No? Well ours do! Check us out first...

CARTOON CLASSICS

1 Meg £375

SCREEN GEMS

1 Meg £365

HARD DRIVE OPTIONS

A1500/2000

GVP OR XETEC SCSI HD
controller with 8 meg RAM
Upgrade option on board.

Card (OK) state GVP/XETEC..	£199.99
Card + 52 meg drive.....	£429.95
Card + 105 meg drive.....	£581.95
Card + 170 meg drive.....	£787.95
2 meg RAM.....	£79.00
4 meg RAM.....	£157.50
8 meg RAM.....	£314.00

A500

Commodore A590 controller,
2 meg ram option on board.

A590 + 20 meg drive.....	£285.95
A590 + 52 meg drive.....	£489.95
A590 + 105 meg drive.....	£645.95
A590 + 170 meg drive.....	£855.95
2 meg RAM.....	£70.00
All ram only sold when bought with drive bundle.	

BULK DISKS

Benchmark branded buld disks + labels

25	50	100	500
£16.00	£28.00	£40.00	£162

PREFORMATTED

We can now even FORMAT the disks for you!

25	50	100	500
£17.25	£30.50	£45.00	£185

3.5" DISK STORAGE

40 Capacity lockable box	£4.50
80 Capacity lockable box	£5.50

POSSO 150 Capacity drawer	£17.00
BANX 90 Capacity drawer	£9.00

* Order ANY 3 boxes and get 10 disks FREE *

A500 0.5 MEG MEMORY UPGRADE

Expansions without a clock are just a waste of time!

With Clock Just £26.99

SLIMLINE 3.5" AMIGA DRIVES

With throughport, switch & FREE computer & Lynx disk!

Only £55.00

TURBO 68000 7/14 MHz

SWITCHABLE CHIP

Complete with board, manual and software

Only £39.99

Revision 5.2 + Amiga needed. If in doubt CALL first.

REPLACEMENT MICE

280 dpi - mouse mat & holder included

Now contains £10 of software vouchers and free copy of
operation stealth

Naksha Mouse.....£23.00

PROFESSIONAL PUBLIC DOMAIN!

- as featured in NEW COMPUTER EXPRESS.

Large range of PACKAGED public domain software
available to give that little edge...Call/write for a list now!

COMPUTER LYNX - The Amiga disk magazine

The action packed magazine ON A DISK!

Demos, news, interviews, reviews and more!

WE CAN'T EXPLAIN IT HERE! - SEND FOR A TASTER!

Exclusive from NEW AGE only £1.50

MOUSE MATS

VINYL.....	£1.99	FOAM	£2.99
------------	-------	------------	-------

PRINTER STANDS

UNIVERSAL.....	£6.99	WIRE	£9.99
----------------	-------	------------	-------

DUST COVERS

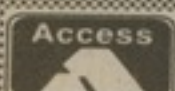
A500	£4.50	STAR LC-10.....	£5.50
------------	-------	-----------------	-------

PRINTER RIBBONS

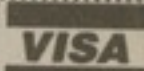
Star LC-10	£3.00	Star LC24-10/24-200 ..	£4.50
Epson MX/FX80/800 ..	£3.50	Epson LX80/86	£3.00
Panasonic KXP1124...	£4.75	KXP 1080/1081/1180..	£4.50

Call for your printer NOW!

POSTAGE AND PACKING: Please add 50p for orders under £2.00,
£1.50 for orders up to £10, and £2.00 for all orders above.



ALL PRICES INCLUDE V.A.T. Payments payable to "NEW AGE COMPUTING"



Dept NCE, 187 Perrysfield Road, Cheshunt, Herts, EN8 0TL
Telephone (0992) 465366 / (0831) 820097. Fax: (0992) 450009

AMIGA

- **Improve your sound quality with Sound Enhancer**
- **Multimedia made easy with Interface Design Kit**
- **Protext 5 upgraded – can it possibly get any better?**

ENHANCED SOUND

If you use your Amiga for musical applications, then no doubt you'll be interested in a new hardware add-on developed by Omega Projects.

The quality of the Amiga's sound capabilities is certainly pretty damned impressive, but Omega Projects claims that its new Sound Enhancer takes that quality to a new high.

The box works by compensating for the loss of high frequency harmonics in the Amiga sound. This is achieved using some quite sophisticated filtering hardware which boosts the Amiga's frequency response range between 8KHz to 22 KHz.

This may not make a lot of sense to most of us, but the net result is a marked increase in sound quality.

Sound Enhancer was originally developed to improve the quality of Amiga sound samplers, bringing them up into line with professional samplers. Obviously your Master Sound samples still aren't going to be on par with something like the Akai S1100, but you'll notice the difference none the less.

The device connects externally to

the two audio jacks at the rear of the Amiga. It can then be connected up to either your Amiga monitor or, even better, the auxiliary input of a hi-fi.

The increase in sound quality isn't just restricted to sampling, however. Because the device intercepts the Amiga's sound output, it will improve the sound of just about anything, ranging from music packages to games.

According to Omega Projects, a prototype of the Sound Enhancer was demonstrated at the recent 16-Bit Show. Visitors were so impressed by the unit that Omega has already taken a large number of orders for the unit.

You can obtain yours by phoning Omega with credit card in hand. The unit costs a mere £34.95. I'll be taking a look at Sound Enhancer in a couple of weeks time when my review sample turns up, so stay tuned for that one.

☎ 0925 763946

SOUND CITY!

Amiga sampling freaks are in for a veritable treat, with no fewer than six new samplers in the pipeline. Even better still, at least four of these are either 12- or 16-bit devices.

You've probably already heard all

about SunRize Industries' new AD-range of 12- and 16-bit sampling cards for the Amiga 2000, but the units are still not shipping. SunRize is blaming this on teething problems, but the 12-bit card at least should be shipping in a matter of days. I've been promised one of these revolutionary devices for review, so I'll be bringing you the low down on this marvellous piece of kit as soon as I can.

SunRize isn't the only company that has its sights set on the 12- and 16-bit sampling. Back in good old Blighty, New Dimensions (developer of the absolutely brilliant *TechnoSound* sampler) has disclosed its plans to produce both 12- and 16-bit samplers for the Amiga.

The company is obviously rather less forthcoming about specific details, but New Dimensions is hoping to have the 12-bit sampler out on the market in a

PROTEXT: THE BEST JUST GOT BETTER

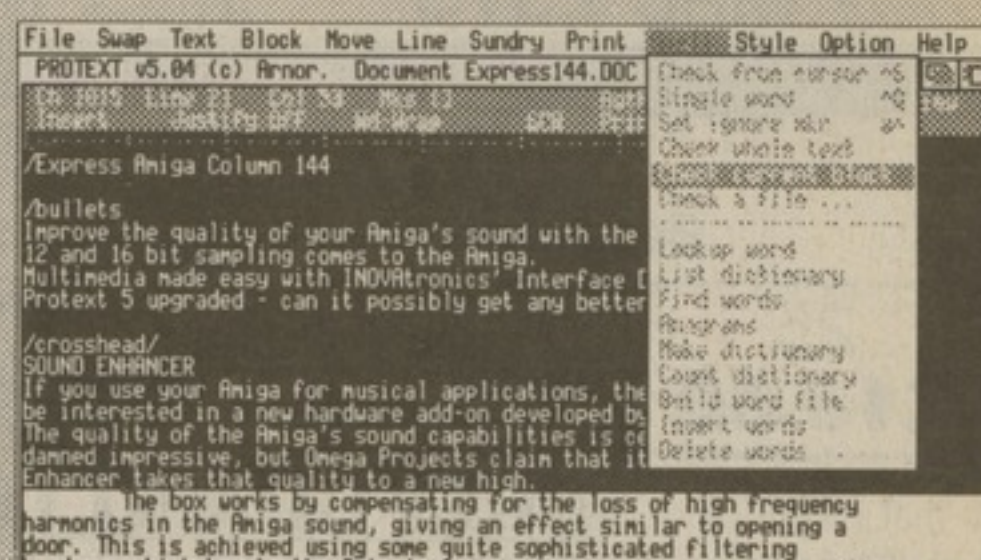
I'm in heaven! Arnor has released a major upgrade to its highly regarded word processing system, *Protext*. Version 5.5 offers many enhancements over the existing release including a much needed thesaurus.

As a fan of *Protext* (I use it to produce all my copy), the inclusion of a thesaurus makes the *Protext* system virtually complete. Based on the Collins pocket thesaurus, it offers a massive 827,000 alternatives picked from 43,000 head words, cross referenced by type and usage.

While the thesaurus is the major

addition, the improvements don't stop there. Other enhancements include a long awaited option to run *Protext* in its own custom screen, automatic hyphenation, mail merge linked directly with Arnor's *ProData*, widow and orphan control, text analysis and a lot more besides.

Protext 5.5 costs £152.75. Existing users can upgrade for £30 from version 5.0 and £60 from versions 4.3 and 4.2. Look



☎ **Protext: look out for a major upgrade soon. Version 5.5 offers a powerful thesaurus and a lot more besides.**

out for a review of *Protext* 5.5 within the next couple of weeks.

☎ Arnor is on 0733 68909.



Can you afford *not* to join?

THE Amiga

PUBLIC DOMAIN CLUB

Yes that's right, you can now get Amiga PD for an amazing 39p per disk (Free if you supply the disk), once you have joined our friendly, fast growing and extremely popular Amiga PD Club. It must surely be the Public Domain buyers dream come true!

Lifetime membership to the club costs only £19.95. Much of this, however, will go straight back into the club to provide you with an even better service. Members will be able to choose as many PD titles as they like from our detailed catalogue disks, listing many of the Classic and Latest titles. We will bring you the very best in Demos, Utilities, Music, Art, Business, Animation, Games, Slides and much more. Just send us the blank disks & return postage and we will despatch your order to you the same day. It just couldn't be easier. As an added bonus, members not wishing to supply their own disks - don't have to. We will send your order on our own high quality disks for just 39p per title. We can't say fairer than that!

Members will also enjoy many other benefits including:

- ★ Many new titles to choose from every month!
- ★ Massive discounts on other Amiga Products!
- ★ All catalogue disks are constantly updated and are available FREE!
- ★ Superb disk magazine, FREE every month. (News, Reviews, Competitions, Letters, Classifieds and much more!)
- ★ A FREE games compilation to welcome all new members! A FREE mystery gift worth £24.99!
- ★ No minimum or maximum order!
- ★ Members can even request titles that we don't have at no extra cost!

Membership is usually priced at £29.95 a year, so apply now and take full advantage of this extra special offer. Remember, you can have LIFETIME membership for an incredible £19.95! Even your first order could save you £££'s!

To become a member, simply fill out the form below and send with a Cheque/Postal Order to:

**P.A.S. Enterprises, Amiga PD Club, Dept NCE ,
3 St. Johns Walk, St. Ives, Cornwall TR26 2JJ, England.**

Join now. We promise you will not be disappointed

**The Lowest
Priced PD
Library in
the U.K.**

Please enrol me as a member of the AMIGA PD CLUB and rush me my members pack and membership number. I enclose a Cheque/Postal Order for £19.95 payable to P.A.S. Enterprises.

Name Address

Postcode Telephone

HITACHI

1Mb SIMMS

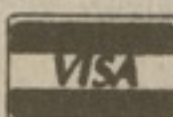
70ns 1Mb x 9

£32

TEL: 0922 616733

FAX: 616737

All prices exclude Vat. P&P U.K. £2.50
Carriage covers up to 50Mb



NDT - Unit 18 Corporation St West
Walsall - West Midlands - WS1 4DU

matter of months. But what makes this sampler so revolutionary is the price – believe it or not, New Dimensions is hoping to sell the thing for under £100!

Another UK company intending to dip its toes in the professional sampling market is St Austel-based MicroDeal which recently revealed that it too has big plans for its existing range of samplers. According to John Symes at MicroDeal, the company plans to upgrade both its Master Sound and AMAS samplers in time for September's Computer Entertainment Show.

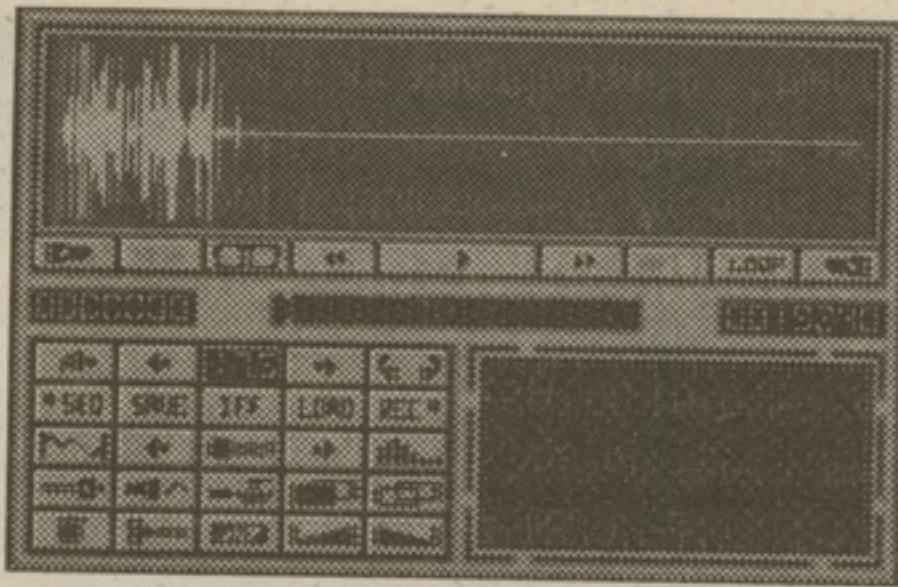
MicroDeal didn't want to give anything away, so specification details are virtually non-existent. Having said that, I'd be very surprised if we didn't at least see a 12-bit sampler (AMAS is the most likely candidate).

CUSTOMISED INTERFACES

Following on from the recent release of its powerful multimedia authoring system CanDo 1.5, Checkmate Digital Ltd has announced the release of a companion product which makes the task of constructing good looking front ends that bit simpler, The Interface Design Kit.

What's more, the product isn't restricted to CanDo – owners of just about any multimedia system can take advantage of what the Interface Design Kit has to offer.

The four-disk kit consists of no



• MicroDeal's Master Sound looks set for a major upgrade. Watch these pages for more!

fewer than 500 IFF-format clips which can be used in just about any package compatible with the IFFILBM standard. The pack is very similar to clip art collections for DTP systems, but INOVATronics has made it more applicable to multimedia.

Clips on offer include commonly used multimedia icons and functions ranging from mathematical symbols, disks, videodisks, music, printers and documentation.

Backing this up is a comprehensive 30-page manual which gives you a run down of the disk's contents.

☎ 071-923 0658.

NEXT WEEK

I've been having a lot of fun with new sound samplers just recently. Next week I'll be taking a look at New Dimensions' TechnoSound Turbosampler. Not only is it packed with features, but it's also dirt cheap! Stay tuned for that one.

Jason Holborn

ST

- Atari to produce CD-I add-on for the entire ST range?
- ST gamers denied Lucasfilm's latest Indy adventure
- Give your speakers a workout with a rocking demo

WHO KNOWS THE SECRET OF THE CD-I BOX?

So, will they or won't they? Atari has been humming and ahing about Compact Disc Interactive technology (CD-I) for as long as it has been knocking out those endearing pieces of beige plastic that we fondly refer to as STes.

However, recently the CD-I story has taken a drastic change of course with the announcement of the Falcon super computer. According to my sources what this means is that Atari has developed its own CD-I technology, therefore it won't be too hard for the company to produce an add-on box for the rest of the ST range.

The development of Falcon means that there is controlling software and CD-I hardware sitting in an Atari lab in California. Atari knows that CD based storage will be the next big technological development to be made available to the masses, if only because Sega, Commodore and Apple all have their own machines ready to sell.

I'm reliably informed from an excellent source within Atari that CD-I for the entire ST range will happen, though the company is unwilling to say when or at what price. I'm also informed by a source within one of the largest software houses in Europe that it has been approached by Atari to produce games software for this machine. We wait with baited DMA sockets.

LIGHT SPEED PASCAL

HiSoft is never quiet for long. It has produced a long line of excellent programming and utility packages ever since the days of the STF (with external drive). The Bedford-based company has just announced a brand new high speed Pascal language called (shock horror), HighSpeed Pascal.

This compiling language runs on the entire ST range and has been designed to be compatible with Turbo Pascal 5.0 on the PC. The £99.95 package is a single-pass compiler which can prepare run-time code at a reputed 20,000 lines per minute.

HighSpeed Pascal can compile to

Continued on next page ➤

BYTEBACK

Ring us now! 0636-79097 we're programmed to help



FAST

DELIVERY SERVICE

...and the keenest prices

THE BEST OF THE PUBLIC DOMAIN

DISK PRICES

1 disk£1.25
10 disks + file box.....£9.99
additional disks99p
(2D = 2nd Drive required)
(Mb = 1 Megabyte required)

GAMES

AG.01 Star Trek; Superb strategy game. Digitised graphics! (2D-Mb-3 disks)
AG.02 Various; Gravewars, Jackland, Pacman, Othello, Empire, Hanoi...
AG.03 Star Trek (Agatronic); Strategy game - Tobias Richter. (2D-Mb-2 disks)
AG.04 Monopoly; full version of the classic property trading game!
AG.05 Pacman 87; Multi level version of this addictive arcade classic.
AG.06 Various; Cosmoroids, Amoeba, Crazy Eights, Blackjack, Backgammon, Daleks, Yahtzee, Stone Age etc...
AG.07 Board and Card games; Cluedo, Othello, Klondike and Cribbage.
AG.09 Puzzle Maker; Jigsaw puzzles from IFF files. Plus Puzzle Pro.
AG.10 Space Invaders; Arcade Classic version! Plus: Lander, Amoeba...
AG.11 Tennis; excellent shareware sports simulation (Mb)

To order any of the above disks simply quote the required disk numbers.
For a complete list of our PD software ask for a FREE catalogue!

AG.14 Flascheiber; Boulderdash style game. Almost Commercial quality!
AG.15 Paranoid game; Arkanoid style, including a screen designer.
AG.16 Castle of Doom; Adventure game with graphics - beginners level.
AG.17 ST Bash; Space Invaders style shoot-em-up, aliens are Atari ST's.
AG.18 Golden Fleece; Infocom standard adventure. Plus: Tron; 2 Player Light cycle game. Train; Railway designer. Star Fleet, Kamikaze Chess etc...
AG.22 Return to Earth; Elite style Space trading game, digitised sound.
AG.24 Drip; Arcade quality game with digitised sounds and smooth sprites! Plus: China Challenge, Frogger etc.
AG.26 Zerg; Ultima style Role Play. Plus: World; Infocom type adventure. Daleks, Callisto, Puzz, Pontoon...
AG.27 Star Trek (USA); Strategy game. Captain the Enterprise. (2D-Mb-2 disks)
AG.28 Quattro; Tetris style. China Challenge; Shanghai style puzzle game Plus: Breaker and Asteroids.
AG.29 Chess; Superb Multi Featured! Titles, Tetris Two, Battleships etc...
AG.30 Twintris; Superb Shape dropping game! MUCH better than original!!!
AG.31 Simpsons; vertical scrolling shoot-em-up style game! (SEUCK)
AG.32 Legotris; another Tetris style game, amusing digitised sound effects
AG.34 Tile Game; AMOS games creator variation on the old 16 puzzle.
AG.35 Cave Runner; Commercial quality Boulderdash style game! Excellent!
AG.36 Wizzys Quest; Professional quality arcade puzzle game.
AG.37 Rings of Zon (Vol.1) Ultima style fantasy/strategy game...
AG.38 Star Trek - Arcade game; SEUCK produced scrolling Shoot-Em-Up.

AG.39 Wacko in Wonderland; Platform game with large Graphics! Cute!
AG.40 Metagalactic Llamas; Classic Commodore 64 game by Jeff Minter!
AG.41 Wet Beaver; Version of original tennis game with digitised sound (Mb)

UTILITIES

AU.01 Jazzbench; Workbench upgrade with many indispensable features!
AU.02 UEDIT; Excellent file editor, a vast improvement on Ed!
AU.03 QL Emulator; plus 2 data disks packed with files. Superb! (3 disks)
AU.04 Amiga Spell; Spelling checker, compatible with most Word Processors.
AU.08 Various; Starchart: 600 stars & galaxies. TXED: editor/word processor.
AU.09 Midi Tools; Midi Keyboard; Five octave, mouse operated keyboard... Prochange; change Midi channels etc.
AU.10 Graphic utilities; Fontfixer, IFF Converter, Palette Converter... Boot utilities: Boottext, Bootup. Plus: Memcheck, Disksalv, Draggpack
AU.11 Starchart; Astronomy program giving positions and movements of all major constellations!
AU.13 Visicalc; Superb full featured Spreadsheet with manual on disk.
AU.14 Various; Amcat; cataloguing system, Icontype; change Icon type, Recoverable RAMdisk, Spell Checker, Black Book, DX Synth voice library...
AU.15 Dope Intro maker; Create Demos with this user friendly, package.
AU.17 D Copy; Excellent disk copier similar to X Copy, Good Nibble mode!
AU.18 North C; Complete C Environment for the Amiga! Amazing value!
AU.19 SID; Workbench replacement with easy file handling, improved DMouse window control and many more features

AU.20 K.O. The Virus; Virus detectors and killers! Includes: Virus X 4.1
AU.21 Avoiding CLI; Lots of useful utilities otherwise only obtainable through CLI; FixDisk, QuickCopy...
AU.22 Text Plus; Word Processor (v2.2) Very professional program with many commercial quality features!
AU.23 Word Wright; Word Processor. Plus: Amiga Spell; Spell checker!
AU.24 Spectrum Emulator; Run some Spectrum games on your Amiga!
AU.26 Complete C Manual; packed with info on C programming, 11 chapters plus 70 executable examples! (3 disks)
AU.27 Amibase (v3.76); Professional quality, multi-featured database program... Recommended!

SOUNDTRACKER

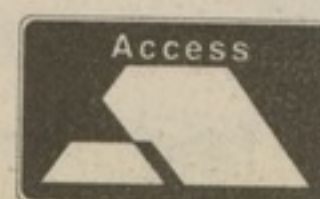
SND.01 Soundtracker; Four versions of this favourite Music creation program.
SND.02 Soundtracker 4; alternative version + instruments disk. (2 disks)
SND.03 Sound Monitor; 20 Demo scores + instructions in this superb sound package! Extra RAM and Drive useful. Plus: Instruments disk. (2 disks)
SND.04 MED Music Editor; Soundtracker style music creator! Easy to use!
SND.05 Soundtracker 8 Track; Superb! Plus converter for 4 track files...
STI.01 to STI.08 Digital Soundtracker samples! 8 disks packed with 100's of files! (Buy one or all 8 for £7.99)
STS.01 Sampled sound effects to use instead of instruments!
STS.02 Longer samples, many from films, Star Wars, 2001, Raiders...

TOP QUALITY DISKS - BY RETURN OF POST!

BYTEBACK

DEPT NCE, 6 MUMBY CLOSE, NEWARK, NOTTS, NG24 1JE

Cheque, postal orders
or credit card facilities
are available



either memory or disk and operates within a multi-window editor environment. According to the press release the program enables, 'modular development and supports many standard units such as GEM/VDI, TOS, Bios/Xbios, Printer, Utilities and graph,' which is all beyond me, but may mean something to you demon programmers out there.

An in-line 68000 assembler is included in that package along with support for add-on 68881 maths co-processor boards. A comprehensive help facility is also included which runs from a desk accessory.

HiSoft tells me that you can upgrade from previous versions for £7.50 by returning your master disks to the company. HiSoft is at The Old School, Greenfield, Bedford MK45 5DE. ☎ 0525 718181.

INDY HANGS UP HIS HAT

It has come as something of a shock to discover that Lucasfilm is now not planning to release an ST version of its graphic adventure game, *Indiana Jones and The Fate of Atlantis*. It appears that the American company felt that it couldn't produce as competent an ST game as it could on other computer formats.

Apparently this decision has nothing to do with declining ST sales in America, which is surprising as American companies usually use this excuse. We can only hope that the company realises that there is an enormous ST market in Europe crying out for the high quality games which Lucasfilm produce. If it

doesn't release *Monkey Island II: LeChuck's Revenge* I shall personally nip over to California and give them a sharp telling off.

SUPER SOUNDTRACKERS

Everyone knows the problems associated with producing decent music on the ST. The built-in music chip is appalling, usually managing a few pathetic bumbles and bleeps, meaning that programmers have had to resort to sequencing sampled sounds together to produce decent tunes.

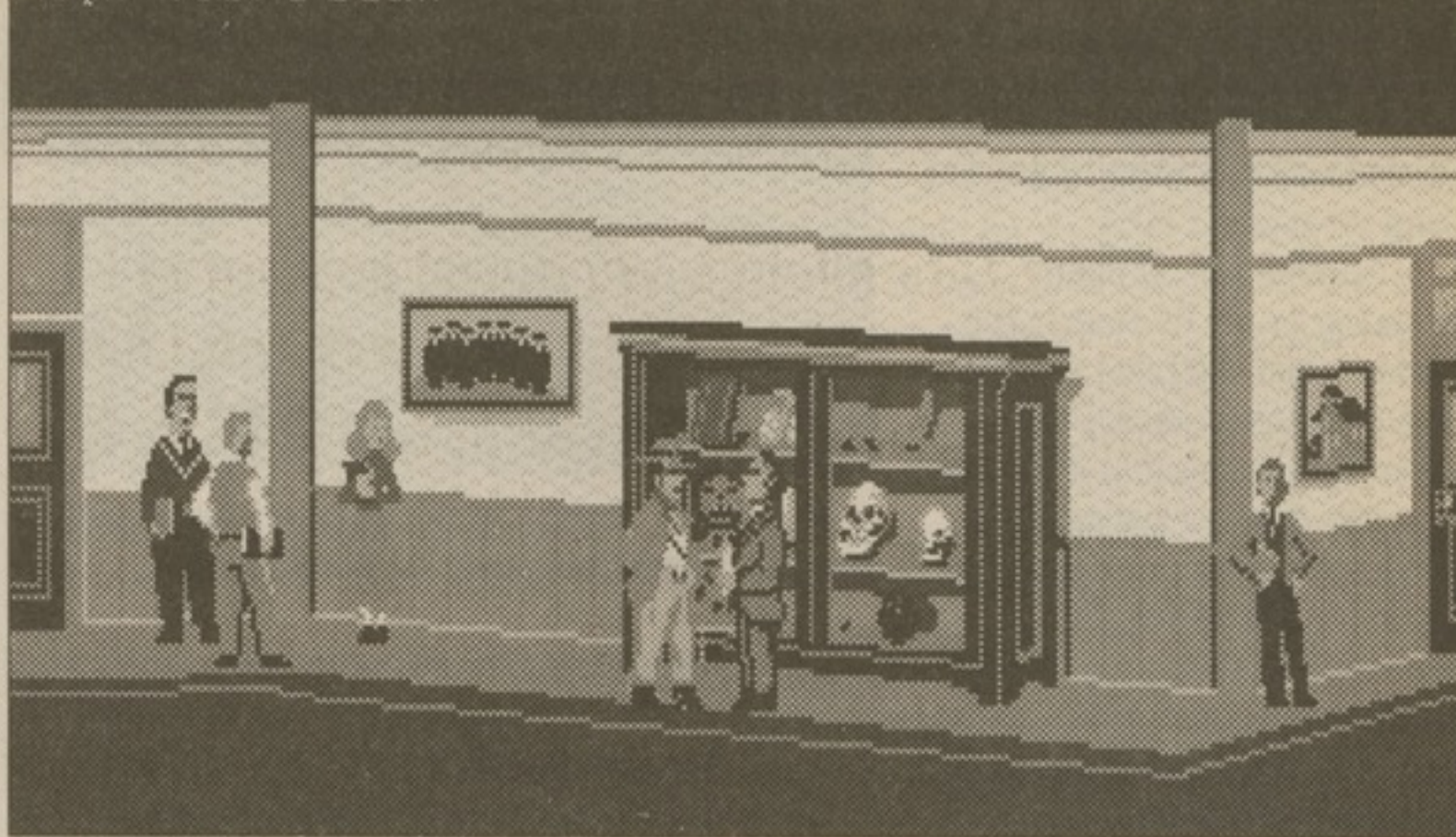
The main problem is that these soundtracker files are usually quite large and are only used at the beginning of games. If, however, you just fancy giving your monitor's speaker a good workout you can pick up loads of these music disks from most public domain libraries.

The best soundtracker demo I've ever heard recently crossed my desk, supplied by the Riverdene PD library. This stonking demo lives under the unassuming name of *A Little Music Demo* and has been written by members of the Inner Circle group.

There are eight tunes on the disk and each one is superb. They are excellent for one reason: rather than attempting to use as many samples as is technically possible and playing them at as fast a speed as possible, the guys have actually created music.

The eight tunes cover a disparate range of styles from eurobeat through to Clayderman-like piano songs. Each is brilliantly pieced together, to the extent that you actually find yourself listening to

Indy!! You're back!



• It seems that *Indiana Jones and The Fate of Atlantis* will not now appear on the ST because Lucasfilm reckons that it cannot do the game justice on the system. What rubbish!

the whole song – unheard of really.

Riverdene has a rather special deal going at the moment, which is worth checking out. It is selling its PD disks at just £1 a go, the snag being that you have to order at least five disks. Riverdene lives at 30A School Road, Tilehurst, Reading, Berkshire RG3 5AN. ☎ 0734 452416.

CHEAP WAY TO UPGRADE

Ladbroke Computing has done it again. The chaps there are fervent supporters of the ST cause and have dropped the price of their excellent RAM upgrades for the ST range. The Aries 2Mb upgrade used to cost £140 and now costs £99.99, while the 4Mb version is an extremely reasonable £169.99.

If you fancy getting your hands on a hard drive, Ladbroke can do you a Datapulse 52Mb unit for £409.99 or a 105Mb unit for £519.99. This batch of summer reductions has been stretched to include the MIDstudio sequencing package which is now selling for £29.99 and to its image scanner which now sells for £39.99.

Ladbroke Computing can be found at 33 Ormskirk Road, Preston, Lancashire PR1 2QP. ☎ 0772 203166.

Andy Hutchinson

Andy Hutchinson is the news editor on ST Format, the UK's biggest selling and best ST magazine which hits the newsstands every month.



40MHz 386 SYSTEM

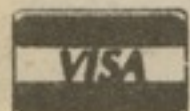
Atronic - 80386-40Mhz CPU -
64K Cache expandable 128K
4Mb 70ns SIMMS RAM - Samsung
110Mb 16ms 64K Cache HDD
Orchid Prodesigner II Video Card
1024x768 SVGA 14" Colour Display
1.44Mb or 1.2Mb FDD - NEC
Mouse Systems 3 Button Mouse
Cherry Tactile Keyboard
MS DOS 5
2 Years On-Site Maintenance
Mini Tower 200W Pwr Supply
Numerous additional options!

£1895

TEL: 0922 616733 - FAX: 616737

Ask for our corporate user list... we have been shipping this system in volume since April.

All prices exclude Vat. P&P U.K. £25



NDT - Unit 18 Corporation St West
Walsall - West Midlands - WS1 4DU

Supra

MODEMS

AMIGA/ATARI/PC MODEMS

Supra 2400
(2400 baud) £120

Supra
MNP 2400 £165
(2400 baud error correcting)

Supra
2400 Plus £199
(The ultimated 2400 baud
modem, 9600 baud throughput)

**HST
MODEMS**
(9600/14400
BAUD)
£595

Supra Modems are guaranteed for 4 years
and are auto-dial, auto-answer and
fully Hayes compatible. Prices include VAT.
Free computer cable with every modem.

081-566-3639

SUPPLY SOLUTIONS,
PO BOX 2136, LONDON, W13 8QJ
Supra approved distributor • Open till 7pm

PC

- Could OS/2 2.0 challenge Windows' popularity?
- Palmtop to PC transfers made easy with IntelliLink
- Making the most of memory storage in DOS 5.0

THE USURPER?

IBM has begun shipping a more stable beta version of OS/2 2.0 to a thousand large corporations, a move welcomed by microcomputer managers.

In a real-world testing blitz that IBM is calling the Early Experience Program, a thousand corporate customers will get copies of the new OS/2 beta software each week.

"We've never shipped a product to customers before that wasn't fully tested," says Lee Reisinger, vice president of programming for IBM. "Openness [in testing] ensures maximum response to the real world. You can't create laboratory LAN environments."

While corporate buyers were cautious about OS/2 2.0 because of the system's past weaknesses, a few of those who have had a chance to use it have already endorsed it wholeheartedly.

"OS/2 gives users what they want," reckons Bill Hollabaugh, a technical consultant for Levi Strauss, in the San Francisco. "Windows got the popular press. I think all that will change with OS/2 2.0."

PC-FILE GROWS UP

ButtonWare's PC-File 6.0 has grown up and now sports a new, Windows-like user interface with buttons, scroll bars, and dialogue boxes. PC-File 6.0 now locates

PC-File databases or supplemental files on any drive or directory, has full mouse support, and better help screens. You can run the program either in character-based or graphics mode.

"It's more professional-looking and takes the confusion out of trying to find a file," says beta tester John Los.

The program's Graphical User Interface-like frontend lets you perform tasks in fewer steps.

Unlike the previous versions of PC-File, version 6.0 will not be offered as shareware. The shareware Version 5.0 will endure and be updated in the next few months to include all known bug fixes and a demo of PC-File 6.0. A

Windows version of PC-File is under development but will be "a total rewrite" of PC-File 6.0.

PC-File 6.0 costs \$149.95. Registered users of previous versions can update for \$49.95.

Contact ButtonWare at P.O. Box 96058, Bellevue, WA 98009-4469. ☎ (206) 454-0479.

HP CROSSES PALM

Hewlett-Packard has announced that IntelliLink, a connectivity software-integration system, will provide support for the HP 95LX palmtop PC via HP NewWave. The company's desktop

Continued on next page ➤

THE (SORT OF) BOOK OF THE WEEK

Here's a novelty. For the beginner and intermediate user WordPerfect 5.1 QueCards are a handy bunch of reference cards lashed together in a spiral binder.

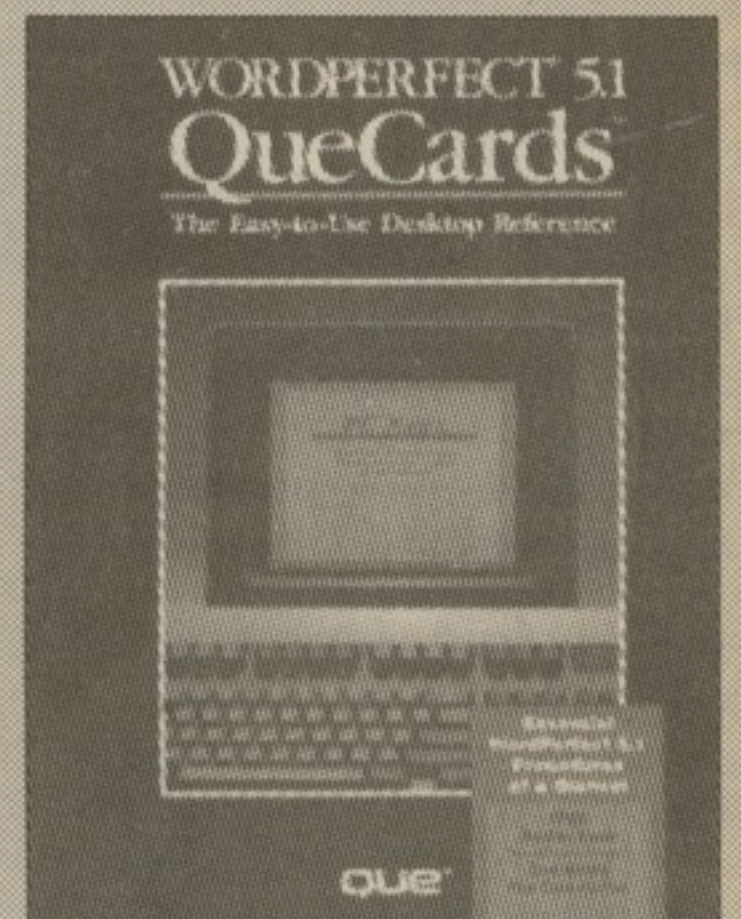
There are 10 sections divided by individual name tabs enabling you to flick to the required section. Once there, a sub-contents page describes exactly what is in that section. When you flip to the section you will see individual blocks of information such as 'To create boldfaced text' or 'To insert date codes' which are highlighted in various colours and with large black arrows for easy scanning.

The cards also make very good use of colour, different fonts and bold type to help speed up your info-intake.

Capping off the ensemble is the 'easel' - a thick piece of cardboard at the front of the binder. Just fold out the cutaway supports and, hey presto, you have an ideal support, set at a readable angle, that allows you to flip through the reference cards with ease.

WordPerfect 5.1 QueCards is a brilliant idea, ideal for when you can't be bothered to wade through heavy manuals. My advice? Hurry and form a Que to buy one!

Available in the UK via bookshops, computer stores or from Computer Manuals. ☎ (021 706 6000).



• Not exactly a book but a very handy ring-bound series of reference cards.

BURNT DIMP SAYS

New Wave Presents

NEW-WAVE Software

are offering thousands of demos on the Amiga, ST, PC at £1.99 a disk, delivered to you by Burnt himself on his woller boots.

Send now for your free cat-disk (a complete demo by New Wave Inc Demo Group). We have thousands of Utils, Mega demos, Music Programs, Animations and anything you can wink of!

If you can code, draw or make muzac join New Waves Demo Group.

NEW-WAVE SOFTWARE

P.O. Box 199, Manchester M1 1JE. Tel: 061 839 5378
Fax: 061 839 5379 BBS: 061 839 5381

Orders outside UK send for details

WEEDIN WELL £1.99 A WHISK THEY MUST BE WAD!



WOW!
WICKED
£1.99
A WHISK?

WADICAL!!!
WHAM EM
IN YOUR
DWIVE

BLANK
DISKS
TWN FOR
£5?



**FASTEST 386
AMERICAN MADE**

**AMD 80386-40
70Mhz Mother Board**

NTD are the sole European Distributor for the Atronic AMD80386-40 Cache Motherboard. We have been shipping this system to 000's of customers since April

£635

64K Cache - 4Mb 70ns On-Board

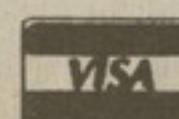
Customers include; MOD - Police - Lloyds - Volvo - Lucas - Touche Ross
Cosworth Engineering - Portsmouth Poly - Throntons PLC any many more..

TEL: 0922 616733

FAX: 616737

Fitting Service available
Baby AT Size - 1Yr Warranty

All prices exclude Vat. P&P U.K. £7.50



NTD - Unit 18 Corporation St West
Walsall - West Midlands - WS1 4DU

◀ software. IntelliLink lets you transfer information between the palmtop and the NewWave environment on a larger PC. Using NewWave, IntelliLink users will be able to open an icon representing the handheld PC and choose that data to transfer from the palmtop to the NewWave desktop.

This selection automatically creates a NewWave object containing that data. To transfer data to the Palmtop you would simply drag and drop objects onto the icon representing the Palmtop itself.

☎ 0344 361263.

GOODIES FROM BORLAND

Borland, which recently acquired the popular dBase system, has publicly demonstrated its own dBase compiler,

indicating that Borland technology will be the future direction of dBase.

Object dBase, as Borland refers to its under development Windows compiler, can generate either Windows applications or DOS EXE files. Output code is fast and small.

Also displayed for the first time in public at the demonstration was *Paradox* for Windows. Borland announced that Paradox and Object dBase will share the same forms, reports, query-by-example functions and database schema designs. Both products will be able to read and write native Paradox and dBase files. Borland's object-oriented approach to building software makes such sharing of application code possible.

Paul Rigby

DOS 5.0 CORNER: OPTIMISING MEMORY

DOS 5.0 does not optimise the use of high memory areas. By changing the order in which devices are loaded by DOS into high memory, the amount of conventional memory made available also changes.

DOS 5.0 is not capable of determining the ideal order in which to load each device, to best match the device's memory needs to the available memory areas.

You can fine tune the load order of device drivers and TSRs by testing different load orders in CONFIG.SYS, followed by the MEM command, which returns statistics on available memory.

There are products, such as QEMM, from Quarterdeck Office Systems, or 386 Max from Qualitas, which are designed to optimise the load order of TSRs and device drivers.

However, if you are not using a third-party memory manager, the first two lines of your CONFIG.SYS should read:

DEVICE=HIMEM.SYS

DOS=HIGH

The first line loads the HIMEM device driver, which makes high memory available. According to Microsoft documentation, HIMEM.SYS must be loaded before any memory managers.

C64

- First impressions of 3-D Construction Kit for C64
- Incentive's virtually unbelievable compilation
- Essential cheats to be a hot shot in Supercars

REALITY OF VIRTUALITY

After weeks of anxious anticipation, the 3-D Construction Kit has finally arrived.

Incentive's latest creation package offers unlimited scope for anyone with imagination and a flair for games design, in a format that is rapidly gaining credibility. Let's face it, Virtual Reality is the definitive games medium.

The whole caboodle is initially slightly complicated, which is why I have neglected to review it this week. My first reaction was "Where the heck do I start?" there being an absolute gaggle of icons and options to use. Thankfully the manual is excellent, and you can start creating more or less straight away.

Hopefully I will have grabbed the intricacies of 3-D world building sufficiently enough to provide a comprehensive and accurate lowdown next issue.

FREESCAPE FROLICS

With the release of the 3-D Construction Kit, it seems rather apt that Incentive

has released the *Virtual Worlds* compilation, featuring the best of the company's games.

Each game utilises the unique Freescape system, which has won more awards than you can shake a stick at. And the effects which it achieves become increasingly impressive from one game to the next in terms of speed and playability.

● *Driller* is set on the moon of Evath, which has a slight problem in the form of a huge gas build-up under the planet surface. It is your task to plant drilling rigs in each of the 18 sectors to release the gas and save the planet; easier said than done.

Some sectors bear a cross where the rig must be planted, but mostly it is a case of trial and error. Later sections feature a number of traps and static guns, but thankfully you can swap your vehicle for a nippy jet.

Fairly straightforward gameplay, with a few rather obscure puzzles, and some excellent music. The screen updates are very slow, however,

GB SYSTEMS — LINK

FOR ALL YOUR COMPUTING NEEDS

DTL PC COMPATIBLE COMPUTERS

All systems are based on 14" SUPER VGA COLOUR MONITOR, 40Mb IDE Hard Drive, Mini Tower Case, 102 Key Keyboard, Mouse, DOS 5, WP, DB, SS Software.

COMPUTER	RAM	
286 16Mhz	1Mb	£995.00
386SX 20Mhz	1Mb	£1195.00
386 25Mhz	1Mb	£1395.00
386 33Mhz	4Mb	£1795.00
486 25Mhz	4Mb	£2195.00
486 33Mhz	4Mb	£2295.00

DTL are a PC manufacturer that supply top quality products at competitive prices. All the PC systems are 100% IBM PC compatible and are built to the highest specification possible. DTL as a company have been around for more than 5 years and supply machines to large corporations. We can supply the whole range of DTL PCs setup to your own individual specification.

THE NEW AMIGA A500

Cartoon Classics Pack £399.00

Inc. Captain Planet, Bart Simpson and Lemmings Games. Plus **EXCLUSIVE** to G B Systems **TEXTENGINE V2** Word Processor, More Games, Spreadsheet, Joystick, Mouse Mat.

We also supply:- MONITORS & PRINTERS
Disks, Disk Boxes, Printer Ribbons, Joysticks, Mouse Mats, Mice, Leads, Connectors. Plus hundreds of other items.

COMPUTER REPAIRS

Amstrad: 464, 664, 6128, PCW Range, 1512, 1640, 2000 & 3000 Range

Atari: ST520, 1040

Acorn: BBC, Master & Arch

Commodore: 64, 128, A500, 2000 & 3000

Sinclair: 48K, 128K, +2 & +3

IBM & Compatibles

Monitors & Printers

Please Phone For
Prices

Save hassle and
send your computer
for repair by post



G B SYSTEMS — LINK

86 WALTON ROAD EAST MOLESEY SURREY KT8 ODL

TEL: 081 979 5638 FAX: 081 941 4440

150 space
public car park
at rear of shop

especially when compared to other Freescape games.

● *Total Eclipse* sees you in 1930s Egypt, again faced with the task of saving humanity from a potential catastrophe. A rather nutty bloke decided to erect a pyramid, at the top of which was built a shrine for the Sun God. He set a curse; if anything should block the sun's rays during daylight hours it would be destroyed. Nice chap.

And, lawks a lawdy, the moon is set to cause a total eclipse in just two hours at which time the pyramid will explode and shower the Earth with debris.

The aim is to reach the uppermost shrine and destroy it within the allotted time. Care must be taken to top up your water supply (from any nearby troughs), and if your heartbeat gets too fast you must rest a while. Ankhs can be collected to gain access to locked chambers and to remove other barriers.

Numerous traps and puzzles litter the pyramid, making it one heck of a challenge. The Freescape system is used to great effect, evoking a very authentic atmosphere and improving on *Driller* in many respects.

● *Castle Master* – Your twin is imprisoned in the Castle of Eternity, doomed to become a spirit slave of the particularly nasty castle Magister. You have set out to rescue him, because that's what twins are all about, and the game starts outside the drawbridge.

Castle Master boasts several enhancements to the genre, most importantly the 'run' option which speeds up the game considerably. Keys must be

collected to unlock doors, but these are as rare as... well... a very rare thing. Treasure can be used to boost your score, while food increases your energy.

The game also features a 'spirit level', which illustrates how many ghosts are in the vicinity – if it climbs too high, your quest is over.

Valuable clues can be found all over the place, on pictures, on keys, and on locked doors. Anything which looks particularly clue-worthy should be examined.

The game has no real puzzles as such, being more a case of unlocking doors and killing ghosts. Freescape has been radically revamped, though, and this is probably the most playable game of the bunch.

● *Castle Master 2 – The Crypt* – This little beauty was previously only released to members of the Home Computer Club. Strange, really, because it is quite an enjoyable sequel.

This time you are imprisoned in the castle crypt, and quite simply you have to escape. In terms of gameplay it is similar to *Castle Master* – except that it contains some incredibly tough puzzles – and it even features the same music! Still, if you enjoyed the original then *The Crypt* is probably right up your boulevard.

Overall, an absolute belter of a compilation. If you enjoy this type of game then my advice is rush out and buy *Virtual Worlds* on cassette (£14.99) or disk (£19.99) without delay. If the genre is new to you, try before you buy – some love 'em, some hate 'em.



● *Castle Master* and *Total Eclipse* are just two of the astounding freescape games on Incentive's *Virtual Worlds* compilation which is not to be missed.

SUPER CHEATS

Supercars is one of those exceedingly rare games converted from the 16-bits which actually retain all the playability of the original. Not only that, the graphics and music are spot on. However, the game can be a mite difficult, so here are a few codes to enter when asked for your name;

HARVEY will take you to level two – there are many more cars on the track, and you also have to do seven laps of each circuit.

ELLA takes you to level three – the real toughie. Not only are the other drivers totally insane, but you have to complete nine laps of each circuit.

LOADED gives you £500,000 with which



to start the game, which allows you to buy every available enhancement, not to mention the biggest and best car.

FONDLE, for some entirely gratuitous reason, allows you to... erm... touch the girlie in the garage. For a nominal fee, every time you touch her in a delicate area she squirms.

And finally for Action Replay owners, try these two POKEs which multiply your winnings by 10:

POKE 10829, 173

POKE 10835, 141

Andy Roberts

FASTEST VGA

STB POWERGRAPH

1024x768 - 512Kb

£135

TEL: 0922 616733

FAX: 616737

All prices exclude Vat. P&P U.K. £7.50
By Insured carrier



NDT - Unit 18 Corporation St West
Walsall - West Midlands - WS1 4DU

Spasoft Computer Services

Atari 520STE Golden Games Pack includes:

14 Top Games, First Basic, Neochrome, ST Tour &
50 Spasoft PD Titles RRP £821£349

Atari 1040STE Golden Productivity Pack includes:

10 Top Games, Infants, Junior & GCSE Education Modules,
Word Processor, Spreadsheet, Database, Art, Music &
Programming Packages. Also Includes 50 PD Titles£399

Amiga 500 Starter Pack 512K Ram£289

Amiga 500 Crystal Games Pack includes:

1024K Ram, TV Modulator, PSU, 14 Top Games,
Deluxe Paint II RRP £809£389

Amiga 1500 Home Office Pack includes:

14 Top Games, The Works Business Software, Deluxe Paint II
& 1084S Stereo Colour Monitor RRP £1790£849

MPS1270 Ink Jet Printer For Amiga£179

Atari Lynx Hand Held & Blue Lightning Game£99

Atari Portfolio Pocket PC£169

CBM CDTV & Indoor Sports Or Psycho Killer Game£549

Sega Game Gear & Ninja Gaiden£99

Amstrad DMP3160 Printer£129

Sega Mega Drive & Altered Beast£139

Amstrad PC3086SD + Printer + Ability + 12" Mono Screen£449

Phone For Our Trade In Prices. Send SAE For Full Price List.
Make Cheques/PO's Payable To SPASOFT. Send To:

Spasoft (EQ),

**123 Mason Avenue, Lillington, Lemington Spa,
Warwickshire, CV34 7QF Tel: 0926 413706**

Personal Cheques May Require 5 Days To Clear.

SPECTRUM

- Is *Stack Up* more than just a colourful *Tetris*?
- Highlights compilation of top diskzine now out
- How to keep on playing even when you keep on dying

STACK UP

If you have an eye for a bargain cast your vision shelfwards for *Stack Up* from Zeppelin. This is another game in the increasingly long line of high quality, non-licensed budget Speccy software.

Stack Up (priced at £3.99) is based on the classic *Tetris* but offers a sufficiently fresh approach to the old block falling down the screen concept to make it worth buying. Instead of rotating shapes as they drift down screen, in this one you change the order of the colours in a three square, horizontal block.

The object is to make lines of three blocks of the same colour which then vanish giving you more time. The game ends when the screen fills completely.

It's not radically different to *Tetris* but plays extremely nicely with a well judged pace and difficulty. If puzzle games are your thing you'll be wanting *Stack Up* without further delay.

OUTLET HIGHLIGHTS

I've told you time and time again what a thoroughly excellent publication *Outlet*, the on-screen mag for Speccy and SAM

users is. If you haven't taken any notice here's your chance for some cheap redemption in the form of *Outlet Extra*, a compilation of some of the magazine's finest moments.

For the price of a standard issue this collection of edited highlights lets you see what you've been missing. In the case of *Outlet Extra 1*, this includes:

- Seven lessons in the difficult art of machine code.
- An assembler and disassembler.
- *Singlestep*, a program that runs and displays code step by step.
- A printing utility for 80 column text.
- A tape-to-disk and Opus-to-tape transfer program.
- *Outdex*, an index for the 40 odd issues of *Outlet*.

The second *Outlet Extra* disk, tape or cartridge is concerned with desktop publishing and graphics manipulation. It includes 300 clip art pictures and *Clipcomposer*, a utility that allows you to grab, move, scroll and create your own screens as well as a screen shrinker and programs to fashion giant text.

Outlet Extra 1 and 2 cost £2.75

each on cassette and Plus D/Disciple, Opus, Plus 3 and Microdrive owners can get either volume for the same amount plus the appropriate blank disk/cartridge. Write to Chezon Software, 605 Loughborough Road, Birstall, Leicester LE4 4NJ.

SAM SELECTOR

If you're a Coupé owner who enjoyed Nigel Kettlewell's *SAMDOS* File Selector you should be interested in his latest utility, the *MasterDOS* File Selector.

Apparently, this will only run with *MasterDOS* booted and, "takes advantage of many of the extra features

that the new DOS has, including subdirectories, RAM disks etc."

Nigel tells me it's got lots of new features like an option to mark files, then copy, erase or recover them all at once. The price is £7.50 on disk only and SAMsters should write to Nigel Kettlewell, 12 Limited road, Moordown, Bournemouth, Dorset BH9 1SS.

MOAN AND PRAISE

NRA Cattell of Walsall has just written in with a moan and recommendation that are worth sharing with you lot.

Firstly the moan, which is about Garner Designs, publisher of *Sinclair* and

THE SECRET OF ETERNAL LIFE AND AMMO AND...

Prolific hackster Alan Jones has been at it again. He's forgone time wasting luxury pastimes like eating and sleeping to bring us another batch of *Multiface* pokes.

Operation Thunderbolt	
Player 1	42918,48-42919,60-42920,0
Player 2	41191,128-42853,61-42855,0-42856,0-41184,128

Extreme	54830,0	Energy
	53365,0	Weapons
Lop Ears	34702,0	Lives

Tornado ECR	54693,0	Lives
Helter Skelter	36936,0	Infinite lives
Atom Ant	42194,33	
	49384,0	Infinite lives
	49444,0	

And here are a couple of cheats to keep the *Multiface*less in the audience happy:

Cavemania
Type ROK as your name to obtain infinite everything.

Aquasquad
Hold down Symbol Shift and C then enter 76726549 to get infinite lives.

DATADISK

LATEST FROM COMMODORE

AMIGA A500 CARTOON CLASSICS 1Mb PACK

Amiga 500. TV Modulator. 512K Ram Expansion. Mouse

Software Includes:-

The Simpsons. Lemmings
Captain Planet. Deluxe Paint III

Free Astra
Game Pack
RRP over £220

OUR PRICE **£399.95**

EXCELLENT VALUE ON BULK DISKS

3.5" DSDD (2 for 1 guarantee)

10	25	50	100
4.15	9.95	18.95	34.95

Sony DSDD

10	25	50	100
4.95	11.45	21.50	40.95

RAINBOW DISKS 3.5" DSDD

10	25	50	100
5.95	12.95	25.95	44.95

RAINBOW DISKS 5.25" DSDD

10	25	50	100
4.15	9.95	18.95	34.95

Branded Sony 3M KAO £7 Box 10

High density disks also available.

All disks 100% error free and are supplied with labels

Bulk Branded KAO 100 £46

A500 Basic Pack.....329.95
Class of 90's First Steps (1Mb) ..469.95

Accessories

1/2 Meg expansion without clock ..26.95
1/2 Meg expansion with clock ..29.95
External disk drive55.95
External disk drive Cumana59.95
Mouse Mat.....2.45
Mouse Pocket.....1.45
Amiga/Atari dust cover3.95
3.5/5.25 Cleaning Kit.....1.95
Naksha Mouse22.95
Naksha Scanner149.95

Disk Storage

3.5 50 Capacity.....4.95
3.5 100 Capacity.....5.95
3.5 Banx Box.....8.95
5.25 50 Capacity.....4.95
5.25 100 Capacity.....5.95

Joysticks

Quickshot Apache6.95
Comp Pro. 500011.95
Quickshot Maverick (Auto).....12.95
Konix Navigator (Auto).....12.95
Logic 3 Manta Ray (Auto).....14.95
Logic 3 Stingray (Auto).....15.95

All prices include VAT. E&OE. P&P £3.50 Next Day £9
UK mainland only

Cheques/PO's etc payable to DataDisk, and send to:-
DataDisk, 15 Wivelsfield Rd, Brighton, BN2 8FP.
Enquiries call **0273 304747**



90Mb HDD £125

Take a standard 45Mb HDD plug in the Stacker and Viola... 90Mb.

DOUBLE THE SIZE OF YOUR HARD DISK

OVER 1,000,000 users of Stack Technology worldwide

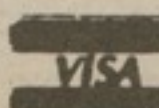
£125

While stocks last!

TEL: 0922 616733

FAX: 616737

All prices exclude Vat. P&P U.K. £2.50



NDT - Unit 18 Corporation St West
Walsall - West Midlands - WS1 4DU

Sam Computing and former organisers of the Plus 3 User's Group. This is the second complaint I've had about the company in the last few weeks. NRA says, "In the past you have had nothing but praise for Garner Designs and the Plus 3 user group in particular, and rightly so..."

He goes on to give three examples of how this has changed, citing the new higher charges for PD software (a hefty £3.95 per disk), the non-arrival of mags and disks and the costly price of the company's clip art collection (£20 for two Plus 3 disks of ST converted clip art). Basically, NRA reckons it's a, "RIP OFF!"

I'd still like to hear from Garner Designs itself or indeed anyone with any comments, good or bad to make about its service.

On a more positive note, NRA enthuses about *Dr Scroll*, a comms utility for the Speccy.

"It was written for idiots like me who need clear on-screen instructions in order to get pass the loading screen," he says.

Apparently it allows you to, "log on, zip around the files, log off and then peruse through them at your leisure." This happy customer reckons it saves a fortune and phone bills and for, "a mere fiver is a real bargain".

Dr Scroll is available from BG Services but old NRA didn't give an address and I'm afraid I don't know it. If anybody does, please write in for the sake of all modem owners!

Robin Alway

CPC

- Serious software at some seriously low prices
- Viz: does the humour outweigh the gameplay?
- How to get off to a flying start with *Extreme*

SERIOUS VALUE

There may not be much serious software coming out for the Amstrad at the moment, but there are bargains to be had on programs that have been out for a while. Mail order supplier Turbosoft is offering some good prices on a lot of Arnor products right now. Arnor's excellent assembler MAXAM, for example, is £19.99. Also on offer are *Protext* (£19.99), *Promerge* (£18.99) and *Prospell* (£18.99).

The *Protext* family is designed as a modular series, where you add on the bits and pieces as you need them. But *Protext* is extremely effective as a stand-alone program; you'll not find a faster, more efficient text processor anywhere, and at the new price it's a steal.

Turbosoft has many more serious utilities on offer, plus a wide range of educational software and loads of games. Write to Turbosoft, Unit 6 and 7, Acacia Close, Cherrycourt Way Industrial Estate, Stanbridge Road, Leighton Buzzard, Beds LU7 8QE.

☎ 0525 377974.

IS VIZ TOO VULGAR?

Viz the comic is relentlessly, tasteless, vulgar, lavatorial, rude, offensive, disrespectful and unpleasant. You either hate it for all those reasons, or find the combination hilarious. I suppose I'd better come off the fence. I find Viz very, very funny. But it's not really a kids' comic. Admittedly, there can't be many kids around who haven't seen Viz, but it's marked as not being not suitable for sale to children, and most parents would not approve.

So what about the idea of a computer game based on it? Doomed or what? Like the comic, the game isn't supposed to be for sale to children, which doesn't leave much of a market for publisher Virgin to attack. And what about the gameplay?

Viz the computer game takes three of the comic's most memorable characters and lets you control either

one of them in a kind of obstacle race with sub-games. In the races, you have to get your character to the finishing line first to continue.

So who are the stars of the game?

● Biffa Bacon is your average street-corner thug, the kind of lad who headbutts housebricks and drinks 15 pints of Guinness before breakfast. He'd be a great candidate for a brain transplant, but first they'd have to hollow out his skull.

● Buster Gonad has a couple of outstanding characteristics – a pair of unfeasibly large testicles which he uses for a variety of purposes. In his particular sub-game he's using them to crack walnuts on a production line, but he can also use them as a giant spacehopper.

● Johnny Fartpants is master of the 'nuclear colonic cough'. His diet consists solely of baked beans and other foods guaranteed to generate the maximum amount of internal pressure, and his anal

Continued on next page ➤



Your choice of protagonists in all their glory. From left to right: Biffa Bacon, Johnny Fartpants and Buster Gonad.



TERRABYTE

THE MEMORY PEOPLE

6A, CHAPEL WAY,
BOTLEY, OXFORD, OX2 9LX
TEL: (0865) 794848
FAX: (0865) 728761

TO ORDER: SEND CHEQUE/PO/ACCESS NO./ BARCLAYCARD NO. TO:
Terrabyte Source Memory at Commodity Prices. Prices can change without notice

Other Memory Upgrades Available: IBM, AST, ZENITH, COMPAQ, NEC, APPLE, AMIGA, EPSON, HP, OLIVETTI, SUN, NEXT, AMSTRAD and many more

★ SPECIAL OFFER ★
BUY 4Mb OF 80n/s SIMMS
>> FOR ONLY £120.00 <<
FOR THIS MONTH ONLY

TOSHIBA LAPTOP MEMORY

T1000se 2Mb Kit MT8312	£175.45	T3100sx 4Mb Kit MT8310	£253.19
T2000sx 4Mb Kit MT8314	£395.00	T3200sx 2Mb Kit MT8307	£104.30
T2000sx 8Mb Kit MT8315	£722.00	T3200sx 4Mb Kit MT8309	£253.19
T1200xe 2Mb Kit MT8306	£105.65	T3200 3Mb Kit MT7137	£170.75
T1600 2Mb Kit MT8302	£109.45	T5100 2Mb Kit MT8301	£98.95
T3100e 2Mb Kit MT8341	£93.40	T5200/8500 2Mb Kit MT8304	£98.95
T3100sx 2Mb Kit MT8308	£93.40	T5200/8500 8Mb Kit MT8313	£555.00

MATHS-COPROCESSORS

80287-10MHz	£68.00
80287-12MHz	£75.00
80387SX-16MHz	£86.00
80387SX-20MHz	£99.00
80387DX-20MHz	£149.00
80387DX-25MHz	£149.00
80387DX-33MHz	£149.00

BUY YOUR MEMORY AT TRADE PRICES

* EXPRESS DELIVERY
* 5 YEAR GUARANTEE!!

SALES HOTLINE 0865 - 794848

INDUSTRY STANDARD DRAM MODULES

DIL RAM Standard memory chips				SIP's & SIMM's			
	70ns	80ns	100ns	60ns	70ns	80ns	100ns
64K x 1	---	---	0.98				
64K x 4	---	1.09	0.95				
256K x 1	---	1.09	0.95				
256K x 4	---	3.25	3.12	256K x 9	15.00	13.50	10.50
1Mb x 1	4.09	3.25	3.12	1Mb x 9	37.75	33.50	32.00
1Mb x 4	---	18.00	---	4Mb x 9	---	145.00	---

"VIRUS FREE" The 100% solution - PHONE NOW!

IBM PS/2 - PLEASE RING FOR DETAILS

FULLY POWERED MOTHERBOARDS

	386sx-16	386sx-20	386sx-25	386sx-33	486-25
RAM OK	£205.15	£235.50	£399.85	£499.25	£1200.15
1Mb	£237.15	£267.50	£431.85	£531.25	£1232.15
2Mb	£269.15	£299.50	£463.85	£565.25	£1264.15
3Mb	£301.15	£331.50	£495.85	£595.25	£1296.15
4Mb	£331.15	£361.50	£525.85	£625.25	£1326.15

>> Buy board with 4Mb RAM and get Co-Proc at cost<<
>> i.e. 386sx-16MHz with Co-Proc at £411.15<<

I/O CONTROLLER CARDS

8 Bit 2S, 1P, 1G	£11.25
16 Bit IDE 2FDD 2HDD	£13.20
16 Bit IDE 2FDD, 2HDD, 2S, 1P, 1G	£27.30

GRAPHICS CARDS

Trident 16Bit 1Mb SVGA (1024 x 768 256 colours)	£85.00
Trident 16Bit 512Kb SVGA (1024 x 768 in 16 colours) (expandable to 1Mb)	£75.00
Oak 16Bit 256Kb VGA	£45.00

FLOPPY & HARD DISKS

1.44Mb 3.5" FDD	£46.00
1.2Mb 5.25" FDD	£48.00
Seagate ST157A 44Mb	£160.00
ST1102A 84Mb	£270.00
ST1144A 125Mb	£340.00
ST1162A 143Mb	£470.00
ST1201A 177Mb	£520.00
ST1239A 211Mb	£550.00

All drives state formatted capacity

NEW!! NEW!! NEW!!

SANYO NOTEBOOK MEMORY
2Mb KIT FOR ONLY £149.95
IBM NOTEBOOK MEMORY
L40SX NOTEBOOK - 2Mb

ONLY £199.95 While stocks last

EXPANDED MEMORY

>> EVEREX BOMBSHELL <<

Everex Maxi Magic (XT-8Bit)			
512K	1Mb	1.5Mb	2Mb
£68	£90	£108	£125
Everex RAM 3000 (AT-16Bit)			
1Mb	2Mb	3Mb	
£105	£140	£180	
Everex RAM 8000 (AT-16Bit)			
2Mb	4Mb	6Mb	8Mb
£250	£325	£400	£475

Allow 7 days for delivery
Phone us with your order 24 hrs

ALL PRICES EXCLUDE P&P AND VAT

◀ emissions can be used for a whole range of activities. In his sub-game he has to pump up a balloon (but not with his mouth) to raise himself as high into the air as possible.

During the racing part of the game, you get a running commentary from Roger Mellie (the man on the telly). Roger Mellie does not mince words. In fact, the words he uses couldn't be minced since they're about as short as they could be already. Roger Mellie emits a constant stream of obscenities in a kind of jovial, everyday fashion. You either find that funny or you don't.

If you tried selling this game without the Viz characters you'd have no chance, even as a budget. The playability is poor, the plot non-existent and there's very little variety.

What there is, though, is lots of humour and novelty. These aren't usually enough to make a game worth buying on its own, but in Viz's case I'm willing to stretch a point. Go out and buy it? Probably not. Play it if you get offered a game? Definitely.

EXTREME TIPS

Here's some tips on how to get through the first level of Digital Integration's unusual arcade puzzler, *Extreme*:

- From the start, head to the top left to shoot the button. This opens the door into the fire down below.
- Head down and to the left and wait for the hole in the fire.
- Zoom inside the hole and stay away from the fire as it moves along (tricky this) until you reach the room at the end.

- Shoot the crystal holder then collect the crystal.
- Guide the crystal up and out of the room, then collect the smart bombs.
- Now head back through the fire using the hole again.
- Go back up to where the button is near the start and shoot the craft to release the Turbo power-up.
- Go back for the crystal and pull it left along the floor then right to the energy pad, where you can recharge.
- Pull the crystal right to the barrier, select Turbo and head past the barrier.
- Guide the crystal right along the centre path and down at the far right.
- Head down to collect the yoyo weapon and then go left with the crystal, using the Yoyo to kill the aliens.
- When you see the craft select Shield.
- The crystal will find the energy input pad, whereupon you can move left – still using the shield – and through the now open hatch.

FAME AND FORTUNE

Amstrad Action wants a Staff Writer. Yes, it's true! Just in case you haven't already seen the ad in *Express*, Future Publishing's very own Amstrad magazine is looking for a new staffer. If you're an Amstrad nutcase, can work full-time in Bath, know all there is to know about Amstrad games and can write about them too, get in touch!

Rod Lawton

Rod Lawton is editor of Amstrad Action. For all the latest CPC news and reviews buy Amstrad Action every month.

MACINTOSH

- High quality fonts that cost less than a pound each
- Save £££s on your phone bills with *Semaphore II*
- Where to buy the best Mac software at US prices

FONT FEVER

A press release and sample disk landed on my desk this week announcing 250 display fonts for as little as 99p each.

The fonts, which are Type 1 PostScript and hence fully compatible with Adobe *Type Manager*, are produced by Teleset Limited, and are called the FontBank library, a US set of fonts which have been licensed for sale in this country.

The fonts are display typefaces – that is, they are most likely to be used for headlines and other work where the

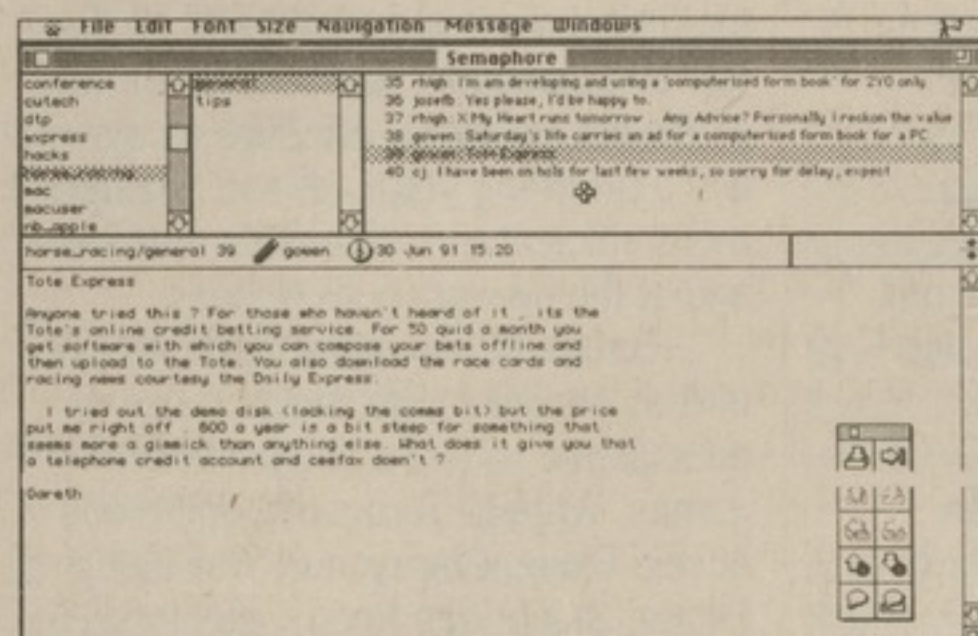
type size is about 14 points or above – and are of remarkably good quality. The full library of 250 fonts costs £247.50 plus VAT and postage and packing, which means that each font costs just 99p. Alternatively, you can order a minimum of 10 fonts for £4.95 each.

The price of these fonts – especially considering the fact that they are really quite high quality – is astonishing; indeed, it could prove difficult for Teleset to persuade people that such low-priced fonts can be of such a high standard.

☎ If you think that this sounds too good to be true, give Teleset a ring on Freephone 0800 555838, and ask for a copy of the company's poster which has samples of all the faces in the range.

MORE FONTS

Talking about fonts, Monotype has just finished converting its well-known range of Classic Fonts into Apple's TrueType format.



• Save your phone bills and make using CIX a great deal more pleasant with *Semaphore II*.

ATARI and AMIGA UPGRADES and REPAIRS

ATARI 520 ST FM/M 1 1/2 Mb

512K UPGRADE (fits all models).....£50

ATARI 520 ST 2Mb/4Mb

ATARI 520 ST to 2.5Mb£100
ATARI 520 ST to 4Mb£170

ATARI 520 STE SIMMS

512K to	1Mb	2.5Mb	4Mb
	£30	£75	£135

PC EMULATORS (ST)

PC Speed£100
AT Speed£210

FLOPPY UPGRADE

1Mb Internal£50

AMIGA MEMORY

1 1/2 Mb with clock.....£32
1 1/2 Mb no clock£27
OTHERS PLEASE CALL

ATARI and AMIGA

Fast guaranteed repairs
low prices
PLEASE CALL

**ALL PRICES INCLUDE VAT AND FITTING.
P&P £3 ON ORDERS UNDER £100.**

ABEVILLE COMPUTERS LTD.

Imperial House, St Nicholas Circle,
Leicester, LE1 4LF

Tel: (0533) 628182

Fax: (0533) 626636

VISA



WHY WAIT?

MSDOS 5

Full Version (not upgrade)

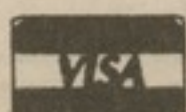
£59

While stocks last!

TEL: 0922 616733

FAX: 616737

All prices exclude Vat. P&P U.K. £2.50



NDT - Unit 18 Corporation St West
Walsall - West Midlands - WS1 4DU

The first fonts to be released as TrueType will be the Gill Sans, Bembo, Plantin and Rockwell families.

The company is also offering what it calls a 'Classic Font Starter Pack' in TrueType format, which contains four weights of Calisto, Rockwell Bold Condensed, Photina Ultra Bold and Headline Bold.

The normal price for these fonts would be £280, but for a limited time the starter pack is selling for £49.90.

☎ Call Monotype's font ordering department on 0737 765959.

CIX FILE NAVIGATION

If you use your Macintosh to access the CIX bulletin board, I'd very strongly recommend that you check out *Semaphore II*, a new off-line conference

reader written by a guy who goes under the CIX username 'Pascal'. It's a superb piece of programming – especially since it is Pascal's first C programming project on the Macintosh.

Basically, the program allows you to download and save information from, say, a bulletin board so that you can read it later when you are off-line, thus saving a fortune a phone bills. *Semaphore II* is in beta test form at the moment, but it's incredibly stable – although some people have reported bugs, I've yet to persuade it to crash (which is more than I can say for the Mac I use at the moment...).

The program has all the features you could want in terms of conference reading, and the author promises support for mail in the near future. When

the program is in its final version, it will be a shareware product – the fee has yet to be fixed, but it's likely to be about £40, and is well worth it (And you'll need to pay the fee – the trial version will be 'crippled', and you'll have to pay to get a fully working version).

If you're a CIX subscriber, just join the conference 'sema4.beta', where you'll find the latest beta version available for download, along with topics for bug reports and general comments. If you have a modem and you want to join CIX, call 081-390 1244 with your modem set to 1200 or 2400 baud, 8 data bits, no parity, one stop bit and have your credit card ready – you can gain immediate access just by quoting the number on your plastic.

Oh, and just in case I haven't been

enthusiastic enough about *Semaphore* – it's totally brilliant, and is one of the most useful pieces of Macintosh software I own. Get yourself a copy.

COLLECTION CATALOGUE

The summer Mac Collection catalogue arrived this week (OK, summer's nearly over, but there you go). The *Mac Collection* is run by the Macintosh User Group – members qualify for a discount on some items in the Collection.

Unlike many vendors of Macintosh software, the Mac Collection offers you a choice of US or UK versions – so if you're convinced that you don't need any manufacturer support and you don't mind words like 'color' appearing in your menus, you can save yourself a fair bit. For instance, the UK version of Adobe *Type Manager* is being sold for £83.43 inc VAT, while the US version is just £68.15. Likewise, you can save a massive £391.65 if you buy the US version of Adobe *Photoshop*, which costs just £451.20.

One neat little gadget in the Collection is *JukeBox Five*, which is a disk feeder that automatically loads and ejects up to 15 floppy disks into your internal floppy disk drive. This allows you to perform unattended backups of your hard disk and so on. Although it only works with flat fronted Macs (sorry, Classic, LC and IIsi owners) it certainly sounds like an interesting idea. It costs £164.50 including VAT.

☎ For a copy of the catalogue, call 0865 311166.

Ian Wrigley

POSTCARD FROM AMERICA

Some of you might think that I don't care for shareware after last week's column. I love shareware, and unlike most users, pay for it.

I wrote about the problems experienced by users of the *MaxAppleZoom* utility. The software stretches the screen out to the very edge of the monitor. All the copies of the program, legal, or otherwise, stopped working last June.

The author finally released a long letter on the networks complaining about System 7, and his heavy work schedule. He covered all possible excuses by claiming his Mac's motherboard died, and he presented his apologies to all the users that were "inconvenienced by the expiration date feature." Some feature! He hopes to get the corrected version out later in the summer.

All software eventually breaks and needs updating – a fact of life. Almost all Macintosh utility programs needed major work after

the release of System 7. I have yet to receive an update notice for any of the packages I own. Commercial programs can bite the dust and not make it past the hurdles of system software revisions.

But all shareware is made to look bad when people don't use their bio-processors. *MaxAppleZoom* is a hack. Period. I was speechless when I heard that some database programmers need it for their layouts to work. It's insane for anyone to put their faith in a major hack, risking their client's business on such shaky foundations.

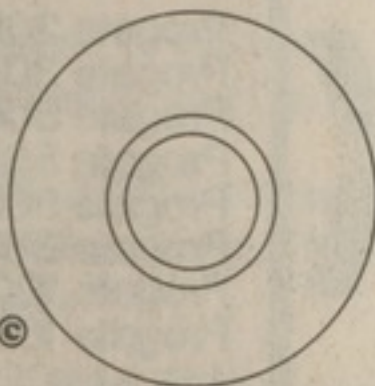
Another precarious spot is System 7 Finder's support of old Macintosh File System 400K (MFS) floppies. You can initialise a disk, but not rename it. I was unable to copy files from one 400K disk to another without a parade of error messages. The instant I returned to System 6.07 all the problems cleared up.



DIGITAL DREAMS proudly presents the Game Soundtracks Collection.

DIGITAL DREAMS PRESENTS The Game Soundtracks Collection

Mixing By
Simon Palmer
Produced By
Martin Baker
Digital Dreams 1991©



All Copyrights in the recorded works reserved. No lending! Unauthorized duplication, lease, public performance and broadcast prohibited.

THE VERY BEST OF



DIGITAL DREAMS PRESENTS The Game Soundtracks Collection

Mixing By
Simon Palmer
Produced By
Martin Baker
Digital Dreams 1991©



All Copyrights in the recorded works reserved. No lending! Unauthorized duplication, lease, public performance and broadcast prohibited.

THE VERY BEST OF



Enjoy the best game soundtracks from your favourite games producers on CD now! Each track has been digitally remastered for superb DDD Stereo sound - and each CD contains over 45 minutes of music. 1st 2 CDs available are from Gremlin Graphics & Psygnosis Software.

FOR FURTHER INFORMATION CONTACT SIMON PALMER ON 0602 754991

TO ORDER YOUR COPY SEND CHEQUE OR POSTAL ORDER TO

DIGITAL DREAMS,

31 BERWICK STREET, SOHO, LONDON, WC1

CDS ARE £7.99 EACH OR £14.99 FOR TWO. OTHER TITLES SOON AVAILABLE.

ATARI

ST Accessories

SM124 Mono Monitor	£129.00
External 3.5" Disk Drive	£69.00
Golden Image Hand Scanner	£169.00
Forget-Me-Clock II	£19.95
ST Monitor Switch Box	£14.95
STE Stereo scart lead	£12.99
STFM scart lead	£12.99
STE Stereo Mkl 8833 lead	£12.99
STFM Mkl 8833 lead	£12.99
Joystick/Mouse extension lead	£4.99
Replacement Mouse lead	£3.95
Standard Parallel lead	£5.95
Mouse Mat	£3.50
Squick replacement mouse	£14.99

Protar Hard Drives

We are now official stockists of the latest in high quality / low price ST hard disk drives from Protar. All Protar hard disk drives come with a full 12 month REPLACEMENT warranty (no lengthy repairs!), a DMA through port, device number switching and superb disk management software.

★ **NEW LOW PRICES** ★

★ **STE COMPATIBLE** ★

Progate 20Mb Hard Disk	£279.00
Progate 40Mb Hard Disk	£341.00
Progate 40Mb with Cache	£423.00
Progate 44Mb Removable	£611.00
Progate 60Mb Hard Disk	£437.00
Progate 60Mb Tape Streamer	£581.00
Progate 80Mb Hard Disk	£486.00
Progate 80Mb with Cache	£565.00
Progate 150Mb Tape Streamer	£793.00
Progate 160Mb with Cache	£922.00
Progate 440Mb with Cache	£1588.00

STE Ram Kits

DIY 1 - 512k upgrade	£29.99
DIY 2 - 2mb upgrade	£89.00
DIY 4 - 4mb upgrade	£159.00

All STE Ram Kits come with instructions and DO NOT require soldering in most machines.

8833

Mkl II

Colour Monitor

The Philips 8833 Mkl II is the perfect colour monitor for ST and Amiga owners. With its stereo sound and super quality picture it really shows off the full capabilities of the STE and the Amiga. The Philips 8833 Mkl II also comes with 12 months on site warranty FREE!

8833 with STFM cable	£249.99
8833 with STE cable	£249.99
8833 with Amiga cable	£249.99

Or even better

The new VISTO colour monitor. The VISTO C14M, made under official UK licence from Philips themselves, is identical in every respect to the Philips 8833 Mkl II including all inputs and outputs. But, VISTO have enhanced the looks of the monitor by replacing the case with a new upgraded better looking version. The VISTO C14M has a no quibble 12 month replacement warranty and comes free with cables for all Amigas and all Atari STs.

VISTO C14M £248.00

PRINTERS

ACCESSORIES & RIBBONS

All of our printers come with a parallel cable to suit Atari ST, Amiga and all standard PC etc (other cables available at extra cost - ask for details). All printers carry a full 12 months warranty. We only sell genuine UK stock - we do not offer inferior "grey imports".

CITIZEN

★ **2 YEAR WARRANTY** ★



EXTENDED SPECIAL OFFER! Due to the massive response to our FREE colour kit offer, we have decided to extend the offer so all Citizen Swift 9,24 and 24X printers will continue to come with a FREE colour kit and colour ribbon until stocks last.

SPECIAL OFFER! For a limited period only we are offering a **CITIZEN PRINTER STARTER PACK** with all Citizen printers. The pack comprises of : 3.5" disk full of printer drivers for the ST, Amiga & PC; 200 sheets of fanfold tractor feed paper; 200 fanfold tractor feed address labels; 5 tractor feed envelopes all for only £12.99 on top of the price of the printer

Citizen 120D + (9-pin, 144 cps draft, 30 cps NLQ)	£139.00
★ Citizen Swift 9 (9-pin, 192 cps draft, 48 cps NLQ)	£199.00
Citizen 124D (24-pin, 144 cps draft, 48 cps LQ)	£209.00
★ Citizen Swift 24 (24-pin, 192 cps draft, 64 cps LQ)	£299.00
★ Citizen Swift 24X (24-pin, 15" carriage)	£399.00

★ Denotes FREE COLOUR UPGRADE KIT

star

Star LC10 Mono (9-pin, 144 cps draft, 34 cps NLQ)	£155.00
Star LC200 Colour (9-pin, 180 cps draft, 45 cps NLQ)	£220.00
Star LC24-10 Mono (24-pin, 180 cps draft, 60 cps LQ)	£215.00
Star LC24-200 Mono (24-pin, 200 cps draft, 67 cps LQ)	£260.00
Star LC24-200 Colour (24-pin, 200 cps draft, 67 cps LQ)	£295.00
Star XB24-10 Mono (24-pin Professional Series)	£475.00
Star XB24-15 Mono (24-pin 15" version of XB24-10)	£600.00

Other Printers

Canon BJ10E Bubble Jet (ink jet, portable and compact)	£289.00
Hewlett Packard DeskJet 500 (ink jet, 3 pages per minute)	£399.00
Panasonic KXP 1124i (24-pin, improved version of KXP 1124)	£279.00

PHONE OR VISIT US TODAY FOR THE BEST PRICES FOR PRINTER RIBBONS AND ACCESSORIES ETC

LASER PRINTERS & PLOTTERS AVAILABLE ON REQUEST - PLEASE RING US WITH YOUR REQUIREMENTS

ATARI LYNX

The Atari Lynx is a superb full colour, hand held, games console using plug-in cartridge games. The Lynx can be used with either batteries or a mains power supply unit. All our Lynx machines come with instructions and are available with or without mains power supply unit and comlynx cable.

Lynx Console Only	£79.99
Lynx + PSU	£84.99
Lynx + PSU + Comlynx	£89.99

Carrying Case	£14.99
Carrying Pouch	£11.99
Car Power Adaptor	£9.50
Sun Visor/Scratch Shield	£6.99
Mains Power Supply	£14.99
Comlynx Cable	£7.99

GAME CARDS

Blue Lightning	£19.99
Chips Challenge	£19.99
Electrocap	£19.99
Gates of Zendocon	£19.99
Gauntlet 3	£19.99
Klax	£19.99
Miss Pacman	£19.99
Rampage	£19.99
Road Blasters	£19.99
Robo Squash	£19.99
Rygar	£19.99
Shanghai	£19.99
Slime World	£19.99
Xenophobe	£19.99
Zarlor Mercenary	£19.99

War Birds ★NEW★	£23.99
Paperboy	£23.99
California Games	£23.99
Block Out ★NEW★	£23.99
Ultimate Chess ★NEW★	£27.99

AMIGA

Accessories

Protar 512K ram upgrade + clock	£29.99
A501 512K ram upgrade + clock	£39.99
A500 15Mb ram upgrade	£99.99
A590 20Mb hard disk drive	£284.95
External 3.5" Disk Drive	£65.00
Squick replacement mouse	£14.99
Golden Image Hand Scanner	£169.00
Amiga Stereo Scart Lead	£12.99
Amiga 8833 Mkl Lead	£12.99
Mouse Mat	£3.50

512K Ram Upgrade with Clock

We are now stocking the new PROTAR 512K RAM UPGRADE WITH CLOCK. The neat, compact 4 chip design comes complete with box, instructions, on/off switch and a full 12 month warranty.

PROTAR 512K Ram with clock £29.99

We also have limited stocks of the genuine Commodore A501 512K Ram Expansion, which we are offering at the ultra low price of :

A501 512K Ram with clock £39.99

Please specify which 512K ram upgrade (either Protar or Commodore) when ordering from us.

NEW Protar Amiga Hard Drives

At last ... high quality hard disk drives for the Amiga A500. The new PROTAR range of A500 hard disks are here ... and just look at the specifications ...

- Perfect fitting to the A500
- Colour matched to the A500
- 5 times faster than the A590
- 8MB internal ram expansion facility
- 1 year REPLACEMENT warranty
- 2 year warranty of Cache versions
- Auto parking & auto booting
- Separate PSU supplied
- Sub 24 millisecond access time
- Hard disk management software

Progate 20Mb Hard Disk	£279.00
Progate 30Mb Hard Disk	£349.00
Progate 50Mb Hard Disk	£429.00
Progate 50Mb with Cache	£529.00
Progate 60Mb Hard Disk	£542.00
Progate 80Mb Hard Disk	£599.00
Progate 100Mb with Cache	£639.00
Progate 160Mb with Cache	£939.00

BEST PRICES

**MAIL ORDER HOTLINE
(0903) 700714**

**10AM to 12MIDNIGHT
7 DAYS A WEEK**

TELESALES LINES OPEN 10AM TILL 12MIDNIGHT - 7 DAYS A WEEK - 0903 700714

ATARI STE PACKS

ALL ATARI ST PRICES INCLUDE VAT AND UK DELIVERY. ALL PRODUCTS CARRY A FULL 12 MONTH WARRANTY. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES.

ATARI STE STANDARD PACK. consists of the computer with mouse, tv lead, manual and all connecting leads etc. The Standard Pack is supplied with NO software.

ATARI STE DISCOVERY 1. consists of the Standard Pack and STOS, First Basic, NeoChrome and 4 games (Carrier Command, Space Harrier, Outrun, Bomb Jack)

ATARI STE DISCOVERY 2. consists of the Standard Pack and First Basic, ST Tour, NeoChrome and 4 games (Dragons Breath, Super Cycle, Indiana Jones, Anarchy)

ATARI STE TURBO. consists of Standard Pack and STOS, Hyperpaint II, Music Maker II, First Basic and 8 games (Indiana Jones, Dragons Breath, Blood Money, Impossible Mission II, HKM, Anarchy, Outrun and Supercycle).

ATARI STE TENSTAR. consists of Standard Pack and Asterix, Chess Player 2150, Drivin Force, Live + Let Die, Onslaught, Pipemania, Rick Dangerous, Rock n Roll, Skweek and Trivial Pursuit II

ATARI STE POWER. consists of Standard Pack and also 20 top selling arcade games. Due to lack of space, it is not possible to list the games. Please phone for details.

ATARI STE KUMA BUSINESS. consists of Standard Pack and word processor K-Word 2 (incl. K-Spell Checker), K-Database, K-Spreadsheet, K-Graph business graphics and Metacomco Basic language.

ATARI STE CURRICULUM. consists of Standard Pack and 3 levels of educational software (from 5 yrs to 50 yrs !!), a word processor, database, spreadsheet, Hyper Paint II and Music Maker II

	512k	1mb	2mb	4mb
ATARI STE STANDARD PACK	£289.00	£319.00	£349.00	£429.00
ATARI STE DISCOVERY 1	£299.00	£329.00	£359.00	£439.00
ATARI STE DISCOVERY 2	£299.00	£329.00	£359.00	£439.00
ATARI STE TURBO	£309.00	£339.00	£369.00	£449.00
ATARI STE TENSTAR	£309.00	£339.00	£369.00	£449.00
ATARI STE POWER	£309.00	£339.00	£369.00	£449.00
ATARI STE KUMA BUSINESS	£319.00	£349.00	£379.00	£459.00
ATARI STE CURRICULUM	Not Available	£369.00	£399.00	£479.00

AMIGA PACKS

ALL AMIGA PRICES INCLUDE VAT AND UK DELIVERY. ALL PRODUCTS ARE UK STOCK AND CARRY A FULL 12 MONTH COMMODORE WARRANTY. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES.

AMIGA A500 BASE A500 computer, mouse, tv modulator, manuals, Workbench, etc supplied 'bare' with no games software * STOCKS VERY LIMITED - SO HURRY *

£299.00

AMIGA A500 BASE 1MB A500 computer with extra 512K ram expansion, mouse, tv modulator, manuals, Workbench, etc supplied 'bare' with no games software. * OUR RAM EXPANSIONS DO NOT INVALIDATE YOUR WARRANTY *

£325.00

AMIGA A500 ASTRA A500 512k computer, mouse, tv modulator, manuals, Workbench, etc supplied with 10 great software titles (see A500 1MB ASTRA pack below for details)

£325.00

AMIGA A500 1MB ASTRA Amiga A500 computer, 512K Ram expansion with clock and battery back-up, mouse, tv modulator, manuals, Workbench etc disks, plus the ASTRA 10 games pack including the following games : Datastorm, Dungeon Quest, E Motion, Grand Monster Slam, Kid Gloves, Powerplay, RVF Honda, Shuffle Puck Cafe, Soccer and Tower of Babel

£350.00

***NEW* AMIGA A500 1MB CARTOON CLASSICS** Amiga A500 computer, 512K Ram expansion with clock and battery back-up, mouse, tv modulator, manuals, Workbench etc disks, plus the following top selling software titles : Lemmings, The Simpsons, Captain Planet and Deluxe Paint 3

£359.00

AMIGA A1500 BASE A1500 computer with 1MB ram, detachable keyboard, 2 x 3.5" 880k disk drives built in, mouse and all manuals. Accepts all A2000 peripherals etc. The A1500 base pack is supplied with no software other than Workbench. Please note : the A1500 does not have a modulator.

£599.00

AMIGA A1500 SOFTWARE consists of the A1500 Base Pack and the following great software Platinum Works, D Paint 3, Populous, Simm City, Battle Chess, Their Finest Hour (Battle of Britain) and 2 books - A-Z of Computer Jargon and Getting the most from your Amiga.

£655.00

PLEASE NOTE - ALL OF OUR PRICES INCLUDE VAT AND DELIVERY !!

IF YOU WISH TO ORDER WITH US, THEN PLEASE SEND YOUR CHEQUES, BANKERS DRAFTS, POSTAL ORDERS, CASH ETC TO OUR MAIL ORDER ADDRESS OR RING OUR MAIL ORDER HOTLINE ANY TIME BETWEEN 10.00AM AND 12 MIDNIGHT, 7 DAYS A WEEK, AND USE YOUR ACCESS OR VISA CARDS. OR ALTERNATIVELY PAY A VISIT TO OUR SHOP, CHIPS COMPUTER CENTRE, AND SEE OUR WIDE RANGE OF COMPUTER GOODS AND SOFTWARE.

SHOWROOM

CHIPS COMPUTER CENTRE, 53 RUGBY ROAD,
WORTHING, WEST SUSSEX BN11 5NB.

TEL : (0903) 700804.

OPENING : MON TO FRI 10AM TO 6PM. SAT 9.30AM TO 5.30PM

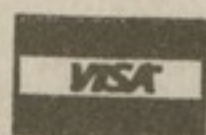
FINANCE / CREDIT FACILITIES.

PART EXCHANGE CONSIDERED. NEW AND USED EQUIPMENT

ATARI STE, AMIGA AND PC COMPATIBLES ON DISPLAY.

ALL TYPES OF SOFTWARE (BUSINESS / LEISURE).

REPAIRS UNDERTAKEN. TRAINING. INSTALLATION. ON-SITE WARRANTIES.



MAIL ORDER

BEST PRICES (DEPT NCE), 53 RUGBY ROAD,
WORTHING, WEST SUSSEX BN11 5NB.

TEL : (0903) 700714.

OPENING : 7 DAYS A WEEK 10AM TO 12 MIDNIGHT

ALL PRICES INCLUDE 17.5% VAT AND FREE DELIVERY (AVERAGE 4 - 5 DAYS).

PLEASE ADD £7.00 FOR NEXT WEEKDAY DELIVERY.

GOODS USUALLY SENT OUT THE SAME DAY WHEN

CLEARED PAYMENT IS RECEIVED BEFORE 2PM.

PERSONAL CHEQUES REQUIRE 7 DAY CLEARANCE

All prices include 17.5% VAT and free UK delivery unless stated otherwise. All prices / specifications / special offers subject to change without notice.

BEST PRICES MAIL ORDER - OUR TELESales LINES ARE OPEN FROM 10.00AM TILL 12 MIDNIGHT - 7 DAYS A WEEK !!!

WHOLE WIRED WORLD



Around the world in seven days – Steve Gold brings you the latest ST accelerator software, Nintendo's new angle on games, Amiga graphics latest update, US magazines for the Lynx and the ST and Atari's support scheme for ST developers

ST DEVELOPERS GAIN SUPPORT

Not before time, Atari US has announced an ST software and hardware developer support scheme. Running under the title of 'The Aegis strategic partner program,' the scheme aims to encourage and support developers of third-party products for the ST and TT series of computers.

According to Atari, the program creates a unique relationship between Atari, its key re-sellers and developers. This relationship "nurtures the development of both vertical-market and cross-discipline solutions, resulting in a strong and effective national sales organisation."

A key feature of the Aegis program is the Aegis Symposium, a clearing house for the ideas and information that create the environment necessary to develop applications for the ST and TT, according to Atari. The first Aegis Symposium will be on 5 and 6 August at the Wyndham Garden Hotel in Sunnyvale, California and at the Cogswell Polytechnic in Cupertino, California.

As this issue of *Express* goes to press, more than 50 computer and music sales, third-party software, and Atari representative personnel have said they will attend the event. Key software developers attending the symposium include: C-Lab Software, Dr. T's Music Software, Hybrid Arts, Roland Corporation USA, Steinberg/Jones, Codehead Software,

NEW AMIGA GRAPHICS SYSTEM MAKES ITS DEBUT

When the Amiga was first announced in 1985 its graphics system was state-of-the-art. Today, however, the competition has caught up and, well, the Amiga is beginning to show its age.

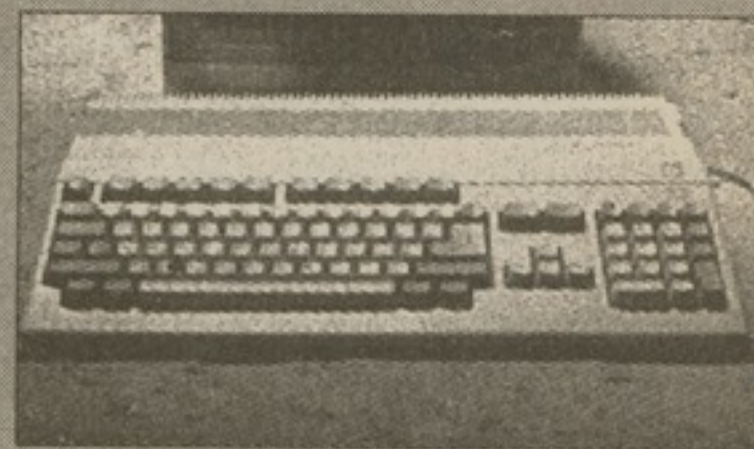
Now make way for the Spectrum 24 system for the Amiga. The unit, which ships at the end of August, is a 24-bit frame grabber with its own RAM that interfaces directly to the Amiga.

BNC I/O ports pipe the video signals between the computer and the Spectrum

24 unit, while special software provides control over real-time frame grabs, variable format saves, frame-buffered 24-bit displays, etc.

Despite the high specifications of the unit – which is said to be superior to Newtek's Video Toaster – it will only cost \$699. According to Digital Micronics, the manufacturer of the unit, initial shipments will be NTSC, although plans are in hand to build PAL units to order.

Contact: Digital Micronics, 5674-P



• *The Amiga's graphics system is no longer state-of-the-art, but the new Spectrum 24 system for the Amiga should keep it in line with its competitors.*

El Camino Real, Carlsbad, CA 92008, United States. Tel: 0101-619-431-8301.

Goldleaf Publishing, Gribnif Software, ISD Marketing, Soft-logik Publishing and Step Ahead Software, claims

Need more information? Contact Atari US on 0101-408-745-2027.

LYNX MAGAZINE OUT IN US

Just when you thought it was safe to buy a Sega Game gear unit, along comes Computer Publications with a new magazine for the Atari Lynx. Called *Gamemaster*, the magazine is exclusively Lynx-only and, according to the company, it will "be bringing you news on and information all of the newest games and hottest hits for the Atari Lynx."

Unlike CP's other point of sale magazines, *Gamemaster* will be the company's first mail-only publications. \$10 buys you ten copies of the magazine delivered to your door in the US, so a little extra should persuade the postman to

deliver it to an address in the UK

According to CP, each issue of the new monthly magazine will include a minimum of two full reviews of new games for the Lynx, as well as a full page of hints and tips, plus a current listing of which game cards are available now for the Lynx, or coming soon.

Computer Publications Unlimited, PO Box 2224, Arvada, CO 80001-2224, USA. Tel: 0101-303-423-6805

NINTENDO'S GAME FOR GIRLS

In a world of male-dominated video games, Nintendo has released 'The little mermaid,' a computer game for its video games systems which it claims is the first package designed specifically for girls.

The heroine of the game is based on the character from the Disney film of the same name. According to Nintendo US, however, this little mermaid is no

shrinking violet, but a woman of the 1990s. "She's spunky, she's resourceful, she has to rescue her friends," said a spokeswoman for the company.

Nintendo is shipping thousands of the \$49.95 game to outlets in Los Angeles and New York, with full US distribution planned by the end of August.

According to Nintendo, 'The little mermaid' is a strategic hunt-and-seek adventure designed for girls between the ages of 6 and 11. The non-violent game was developed, said company officials, after seeing statistics on Nintendo games machine which show the number of girl users of the company's games systems rising from 19 per cent in 1988 to 37 per cent in 1990.

Considering Nintendo claims to have sold more than three million of its games systems in the US, that's a lot of potential sales – maybe that's why the Japanese giant is aiming to sell 500,000 copies of the package in the first year.

ST ACCELERATOR PACKAGE OUT NOW

Branch Always has announced that version 3.0 of its *Quick ST* software accelerator for the Atari ST is now shipping to all users who ordered it or upgraded to it directly through the US company. *Quick ST 3.0* includes support for all ST, STE, Mega ST and TT computers. In addition, the company claims that this new version includes support for all of the new TT graphics modes.

So what is *Quick ST*? According to Branch Always, it's a software accelerator for the ST – the package works by replacing many of the TOS functions with its own recoded and faster routines. With this version of the package, Branch Always is claiming that typical text and graphics functions of TOS are between three and four times faster when using *Quick ST 3.0*. This, the company says, means faster screen redraws and faster programs, whether programs are running on a 520 ST running at 8MHz or a Mega STE running at 16MHz.

On the Atari TT, the combined power of the machine's 68030 microprocessor and *Quick ST 3.0* results in text and graphics functions running 10 to 50 times faster than on a regular ST.

Branch Always is not the only company with an ST/TT accelerator package on the market. The other packages are *Turbo*



• *Quick ST 3.0 works by replacing many TOS functions with its own recoded and faster routines. It supports ST, STE, Mega ST and TT machines.*

ST and New DVI. But Branch Always claims that only *Quick ST 3.0* speeds up all the Atari TT screen resolutions. It runs on all version of TOS and requires around 50K of RAM.

To use the package, a single .PRG file is located in the Auto folder of the boot disk. The same version of the package drives monochrome and colour screens. Surprisingly, it is still not overpriced – the software comes with all documentation for \$34.95.

If budgets are tight, *Quick ST 2.2* is still available at a reduced price of \$24.95 – the package isn't as fast as version 3.0, but it does squeeze into just 20K of RAM. Contact Branch Always Software 14150 N.E. 20th St. #302, Bellevue, WA 98007, USA.

ST CONNECTION MAGAZINE DUE IN SEPTEMBER

Computer Publications has announced that its *ST Connection* magazine, first reported in this column earlier this year, is now close to launch. The magazine sounds almost too good to be true – a free magazine with 16 pages of editorial distributed via Atari dealers throughout the US and Canada.

According to Computer Publications, the magazine's cover price will be paid for by advertising. By the end of the year, editorial in the monthly magazine should be boosted to 24 pages. CP is also offering the magazine by mail order. Costs have yet to be decided, but will be offered on an 'at cost' basis. Contact Computer Publications Unlim-ited, PO Box 2224, Arvada, Colorado 80001-2224, USA. Tel: 0101-303-423-6805. ■

Evesham Micros

All our prices include VAT at 17.5% and Delivery

AMIGA SPECIAL DEALS

VIDI-Amiga video digitiser	£ 110.00
VIDI-Chrome-Amiga colour splitter	£ 16.95
VIDI-RGB colour input splitter	£ 64.95
RocGEN Genlock Adapter	£ 114.99
MiniGEN Genlock Adapter	£ 95.00
CBM A590 20Mb Hard Disk	£ 279.00
A590 512K RAM Upgrade	£ 29.95
A590 1MB RAM Upgrade	£ 59.95
A590 2MB RAM Upgrade	£ 99.95
A500 Replacement PSU	£ 39.95
A500 Replacement internal 3.5" Drive	£ 49.95
KCS Powerboard PC Emulator	£ 229.99
Amiga Virus Protector	£ 9.95
Stereo Sound Sampler inc. s/ware	£ 29.95
MIDI Interface	£ 19.95
Golden Image Handy Scanner	£ 145.00
Kickstart 1.3 Upgrade	£ 29.95

Buy an Amiga Feature Pack From Evesham Micros AND YOU ALSO GET

THESE FABULOUS GAMES:
Tracksuit Manager '90 • Subbuteo • Diskman •
Jungle Book • Diet Riot • Lost N Maze •
Battle Squadron • Asterix • Block Alanche •
Tank Battle • Treasure Trap • Nigel Mansell
PLUS! A wordprocessor and spreadsheet
N.B. Not supplied with A500 'Base Pack' offers

NEW! AMIGA 500 1MB CARTOON CLASSICS PACK

Incredible Value !!! Includes
LEMMINGS, BART SIMPSON vs THE SPACE MUTANTS, CAPTAIN PLANET and DELUXE PAINT III
ONLY £369.99
Cartoon Classics plus 3.5" External Drive ... £419.99

A500 COMPUTER BASE PACK

Amiga A500 Base Package	£ 307.49
Amiga A500 Base Package with 512K RAM/Clock Upgrade ..	£ 333.99
Amiga A500 Base Package plus External 3 1/2" Drive	£ 357.49
Amiga A500 Base Package plus External 3 1/2" Drive and 512K RAM/Clock Upgrade fitted ..	£ 383.99
N.B. Does not include extra games software.	

A500 1MB Screen Gems Pack ...	£ 369.99
A500 1MB Screen Gems Pack plus 3 1/2" Ext. drive	£ 419.99
CLASS OF THE 90's Package ...	£ 499.00
CLASS OF THE 90's Package plus 3 1/2" Ext. Drive	£ 549.00
Amiga 1500 Starter Pack	£ 949.00

ZY-FI amplified stereo speakers

GOT AN AMIGA, ATARI STE, ARCHIMEDES, SEGA MEGADRIE, ATARI LYNX OR NINTENDO GAMEBOY? THEN GET THE FULL SOUND POTENTIAL WITH THIS PAIR OF FULL RANGE, AMPLIFIED STEREO SPEAKERS!

ONLY £39.95

3 1/2" EXTERNAL FLOPPY DRIVES

Compatible with the ST or AMIGA

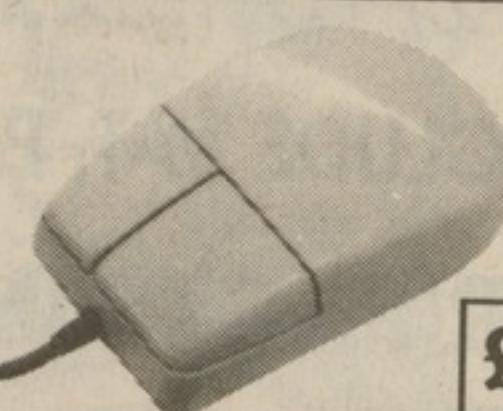


Very quiet • Slimline design • Cooling Vents • Sleek, high quality metal casing • Suits any Amiga or Atari ST • Full 1Mb Unformatted Capacity • Quality Sony / Citizen Drive Mechanism • Convenient On / Off switch on rear of drive • Long reach connection cable for location either side of computer

AMIGA VERSION ONLY **£54.95**

ATARI ST VERSION ONLY **£54.95**

TRUEMOUSE (ST OR AMIGA)



WE GUARANTEE that this is the smoothest, most responsive and accurate replacement mouse you can buy for your Atari ST or Amiga. Excellent performance, amazing low price!

£17.95 SATISFACTION GUARANTEED

PHILIPS 15" TV/MONITOR



With its dedicated monitor input, this model combines the advantages of a high quality medium resolution colour monitor with the convenience of remote control Teletext TV - at an excellent low price! NEW Version features dark glass screen for improved contrast, plus full range 3-way speaker sound output.

£269.00 Including VAT, delivery & cable

Philips CM8833 Mk.II including ST or Amiga cable .. £ 239.00

PRINTERS ALL PRINTERS INCLUDE CABLE & 1 YEAR ON-SITE WARRANTY

Star LC10 best-selling 9-Pin PRINTER, SPECIAL PRICE	£ 129.95
Star LC 200 9-Pin Colour, 4 fonts, 180/45cps	£ 209.00
Star LC 24-10 24-Pin multifont, 180/60cps	£ 209.00
Star LC 24-200 24-Pin multifont, 200/67cps	£ 249.00
Star XB24-10 Inc.COLOUR Upgrade and Sheet Feeder	£ 359.00
Olivetti DM100S 9-Pin, includes 1 Year on-site warranty	£ 115.00

olivetti DM124C 24-pin Professional COLOUR printer

Professional Quality 24-Pin Colour Printing - At an affordable price!

Offering advanced COLOUR output with the superior quality of Olivetti 24-pin printing, the DM124C represents excellent value! Consistent high quality is assured every time. Guaranteed Peace Of Mind, with 12 Months On-Site Warranty cover!

200 cps draft, 50 cps LQuality • 7 Colour output; Graphics resolution 360 x 180dpi • Complete with cable, Colour Ribbon and 12 MONTHS ON-SITE WARRANTY

Olivetti DM124C Normal RRP: £ 389.95 inc.VAT

SPECIAL OFFER! £269.00 including VAT and delivery

LYNX Portable Games Console

Only £109.99 INCLUDES POWER SUPPLY & GAMECARD OF YOUR CHOICE!

Electro Cop	£21.95	Rygar Warrior	£21.95	Gates-Zendocon	£21.95
Slime World	£21.95	Zalor Mercenary	£21.95	Chips Challenge	£21.95
Klaxx	£21.95	Ms Pacman	£21.95	Shanghai	£21.95
Roadblasters	£21.95	Xenophobe	£21.95	Rampage	£21.95
Paperboy	£21.95	Blue Lightning	£21.95	Gauntlet 3	£24.95

Cigarette Lighter Adaptor	£ 9.99	Lynx Pouch	£ 9.99
Sun Visor / Protector	£ 5.99	Lynx Kit Case	£ 14.99

ATARI

'KICK OFF' with GAZZA at Evesham Micros!



EVESHAM MICROS PRICE PROMISE - WE WILL BEAT ANY GENUINE ATARI ST PACKAGE OFFER ON A LIKE-FOR-LIKE BASIS

FREE! With EVERY ST Pack

★ 'GAZZA 2' ★ 'TRACKSUIT MANAGER 90' ★ 'SUBBUTEO' ★ 'THE BALL GAME' ★ 'TREASURE TRAP' ★ 'ASTERIX' ★ 'SKIDOO' ★ 'LEONARDO' ★ TOP QUALITY JOYSTICK ★ 10 X 3.5" DS/DD DISKS ★

TOTAL RRP OF EXTRAS: OVER £180.00!

All our ST prices inc.mouse, user guide, etc. PLUS 5 disks full of specially selected P.D. s/ware, inc. paint program, wordpro's, games, graphics & sound demos, desk accessories and utilities.

520 STE 'DISCOVERY EXTRA PACK'

This excellent STE starter package from Atari includes the Atari 520 STE with 1Mb Drive, 512K RAM, full digital stereo sound, PLUS extra software including:

'Dragon's Breath' • 'Super Cycle' • 'Indiana Jones' • 'Anarchy' • 'Neochrome' • 'FirST BASIC' • 'Atari ST Tour'

£299.99 inc.VAT and delivery

ONLY £329.99 WITH 1MB RAM FITTED
ONLY £369.99 WITH 2MB RAM FITTED
ONLY £439.99 WITH 4MB RAM FITTED

520 STFM 'DISCOVERY PACK'

Pack includes 520STFM computer, plus:
STOS Games Creator • Outrun • Carrier Command • Bomb Jack • Space Harrier • Neochrome • FirST BASIC • Atari ST Tour • 'Discovering your Atari ST' Book

£279.99 inc.VAT and delivery

ONLY £309.99 WITH 1MB RAM FITTED

1040 STE 'FAMILY CURRICULUM PACK'

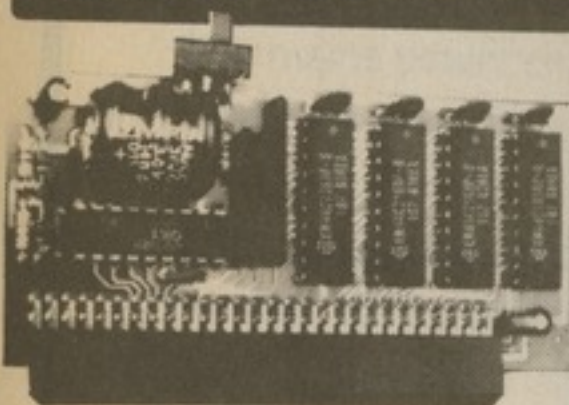
1040 STE including educational & productivity software:
Educational Software modules, split into three age categories, from Early School to GCSE revision. • Productivity Software featuring Wordprocessor, Database and Spreadsheet (RRP over £100) • Plus! Hyper Paint, Music Maker and FirST BASIC

£369.99 inc.VAT and delivery

ONLY £449.99 WITH 2MB RAM FITTED
ONLY £529.99 WITH 4MB RAM FITTED

SM124 monochrome hi-res monitor	£ 129.95	Reference 40Mb SCSI Hard Disk inc.PSU	£ 349.00	VIDI-ST & VIDI-Chrome video digitiser pack ..	£ 99.95
Philips CM8833 Mk.II, inc.cable	£ 239.00	Reference 100Mb SCSI Hard Disk inc.PSU ..	£ 499.00	VIDI-RGB colour input splitter for VIDI	£ 64.95
Joystick Accessibility Adapter for ST's	£ 4.95	Golden Image Handy Scanner Package	£ 145.00	Dust Cover - for any STF / STFM	£ 4.95

AMIGA 500 512K RAM/CLOCK UPGRADE



£28.99

also available without clock for only £24.99

Direct replacement for the A501 Expansion • Convenient On/Off RAM Switch • Auto-recharging battery-backed Clock • Compact unit size • Ultra-neat design

A500 1.5MB RAM EXPANSION (requires Kickstart 1.3) ... ONLY £79.00

Kickstart 1.3 upgrade available from us for only £ 29.95

NEW! MEGABOARD

Connects to your 512K RAM Upgrade to give 1.5Mb!

With the MEGABOARD, you can further expand your A500's memory to a total of 2Mb without disposing of your existing 512K upgrade (must be 4 x RAM-chip type, or not exceeding 9cm in length). Needs Kickstart 1.3 to operate

Installation requires no soldering! **ONLY £59.95**

ST SIMMS RAM EXPANSION SYSTEM

- ✓ Fits Atari STFM and MEGA series machines
- ✓ Uses SIMMS RAM Modules for Effortless Upgradeability
- ✓ Probably the neatest ST RAM Upgrade available!

RAM Upgrade (unpopulated)	£ 44.95
RAM Upgrade With 512K RAM Installed - upgrades a 520 to a total of 1Mb RAM	£ 74.95
RAM Upgrade With 2Mb RAM Installed - upgrades a 520/1040/Mega1 to 2/2.5Mb	£ 119.95
RAM Upgrade With 4Mb RAM Installed - upgrades a 520/1040/Mega ST to 4Mb	£ 199.95

N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existence which may require a little soldering.

PLUG-IN SOLDERLESS ST RAM UPGRADES

Two versions allow upgrade to 1Mb, or 2 / 2.5Mb • Simple, fast and effective RAM upgrade path • Suits almost any 520 or 1040 ST model (not STE machines) • Requires no soldering or technical know-how

512K VERSION : UPGRADES 520 ST's TO 1MB RAM	£ 49.95
2MB VERSION : UPGRADES 520 or 1040 ST's TO 2 / 2.5MB RAM	£ 99.00

Evesham Micros

RETAIL SHOWROOMS

Unit 9 St. Richards Road
Evesham
Worcs WR11 6XJ
☎ 0386 - 765180
fax : 0386 - 765354
Open Mon - Sat, 9.00 - 5.30

5 Glisson Road
Cambridge CB1 2HA
☎ 0223 - 323898
fax : 0223 - 322883
Open Mon - Sat, 9.30 - 6.00
IBM Dealer • Corporate Specialist

1762 Pershore Road
Cottrellage
Birmingham B30 3BH
☎ 021 - 458 4564
fax : 021-433 3825
Open Mon - Sat, 9.00 - 5.30

ALL PRICES INCLUDE VAT @ 17.5% AND DELIVERY
Same day despatch whenever possible. Express Courier Delivery (UK Mainland Only) £6.50 extra.

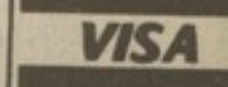
MAIL ORDER DEPARTMENT

Unit 9 St Richards Road, Evesham, Worcs WR11 6XJ



Call us now on ☎ 0386-765500

Lines open Mon-Sat., 9.00 - 5.30. Fax: 0386-765354
Technical support (open Mon-Fri, 10.00 - 5.30): 0386-40303



Send an Order with Cheque, Postal Order or ACCESS/VISA card details. Please allow 5 working days for Personal Cheque clearance.

Government, Education and PLC orders welcome
All products covered by 12 Months Warranty
All goods subject to availability.

LIGHT PHAZERS

FOR THE BEST IN HOME COMPUTER FUN!

PHAZER PACKS NOW AVAILABLE FOR THE FOLLOWING MICROS:

Amiga	£39.99
Atari ST/STE.....	£39.99
CBM 64.....	£29.99
Amstrad CPC	£29.99
Spectrum +2/+3	£29.99

ALL PRICES INCLUDE VAT, PACKING & POSTAGE



**FULL
MANUFACTURERS
GUARANTEE**

ALL PHAZER PACKS INCLUDE AT LEAST TWO FREE SOFTWARE GAMES!

Please send cheque/PO made payable to:- **LIGHT PROMOTIONS**

166 Derlwyn, Dunvant, Swansea, SA2 7PF.

PLEASE STATE MODEL REQUIRED. For credit card orders ring 0792 205491

DIRECT DELIVERY SERVICES

SUPPLIERS OF MULTI LISTING COMPUTER PAPER

7 BRITTANY COURT, HIGH STREET SOUTH, DUNSTABLE, BEDFORDSHIRE, LU6 3HR

Telephone: (0582) 667999

*Direct Delivery Services - wholesale suppliers of
computer listing paper, facsimile rolls, computer labels*

IF YOU HAVE A PRINTER - WE HAVE THE PAPER

CODE	PRODUCT		QUANTITY		1 BOX
A1	11 x 9.5	60 GSM	Plain + M/R	2000	£13.97
A3	11 x 9.5	70 GSM	Plain + M/R	2000	£15.14
A5	2 Part	NCR	Plain S/perf	1000	£18.60
A6	3 Part	NCR	Plain S/perf	750	£24.00
A7	4 Part	NCR	Plain S/perf	500	£22.60
A8	11 x 14.5	60 GSM	Plain + M/R	2000	£17.85
A10	11 x 14.5	60 GSM	Half inch green bars	2000	£17.85
A11	11 x 14.5	70 GSM	Plain	2000	£20.43
A12	11 x 14.5	70 GSM	Music Rule	2000	£20.43
A13	11.67 x 9.5	60 GSM	Micro perf (A4)	2000	£15.30
A14	11.67 x 9.5	70 GSM	Plain Micro perf	2000	£16.30
A15	11.67 x 9.5	80 GSM	Plain Micro perf	2000	£17.80
A16	11.67 x 9.5	90 GSM	Plain Micro perf	1500	£19.70
A17	12 x 9.25	60 GSM	Plain Micro perf	2000	£15.80
A18	12 x 9.25	70 GSM	Plain Micro perf	2000	£16.80
A19	12 x 9.25	80 GSM	Plain Micro perf	2000	£19.70

FACSIMILE ROLLS

CODE	SIZE		
A20	210 x 50 x 25	12 Pack	£46.25
A21	216 x 100 x 25	6 Pack	£44.69
A22	210 x 100 x 25	6 Pack	£43.49
A23	210 x 30 x 25	12 Pack	£31.85
A24	210 x 30 x 12.7	12 Pack	£31.85
A25	216 x 30 x 12.7	12 Pack	£32.81

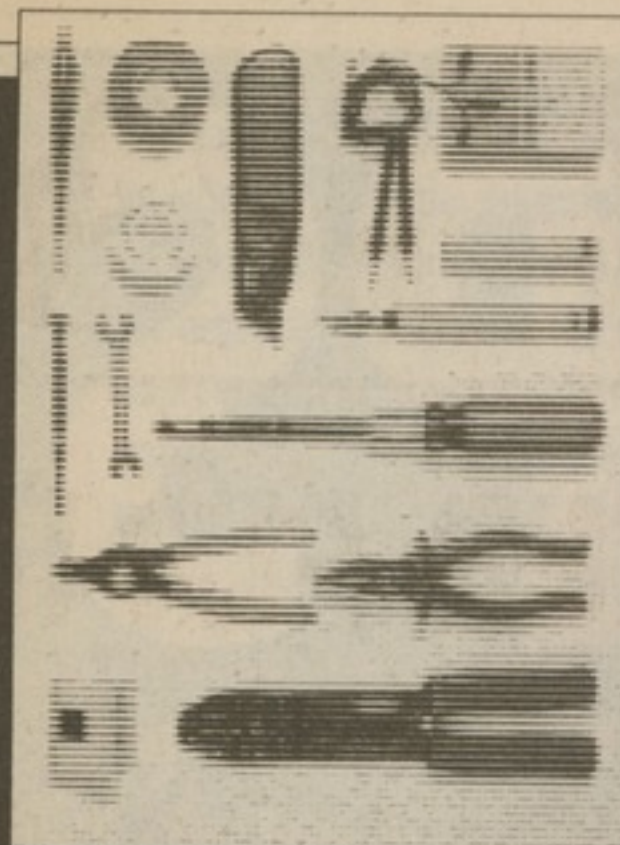
COMPUTER LABELS

SIZE	X/WEB	QUANTITY	PRICE
64 x 36	3	12000	£34.69
70 x 36	1	4000	£16.31
80 x 36	4	16000	£49.47
89 x 24	1	2000	£8.25
89 x 36	1	4000	£17.47
89 x 36	3	12000	£42.50
89 x 36	2	8000	£30.37
89 x 36	1	2000	£10.50
89 x 49	3	9000	£42.20
89 x 49	1	3000	£18.86
102 x 36	1	2000	£11.30
102 x 36	2	8000	£35.29
102 x 36	2	2000	£12.11
102 x 36	3	12000	£46.65
102 x 36	1	4000	£19.57
102 x 49	2	2000	£14.89
102 x 49	1	6000	£36.57
102 x 49	1	2000	£14.39

3.5" DSDD DISKS

50	£23.00	500	£145.00
100	£36.00	1000	£285.00
200	£67.00		

*This is just a small selection. We have fax rolls for all machine models. All prices exclude VAT. All prices include delivery U.K. Mainland.
Cheques/P.O.'s made payable to D.D.S., 7 Brittany Court, High Street South, Dunstable, Bedfordshire, LU6 3HR.
Telephone: (0582) 667999. Fax: (0582) 602508*



CIRCUIT CITY

Nothing happens when you switch your machine on and you're wondering what you can do. Keith Pomfret shows you the first steps to fault finding

The only thing more annoying than taking your machine to a repairer to find that it's the fuse in the plug that's blown is when you find out that the part that needs replacement costs more than the whole machine is worth.

A breakdown where a disk drive fails or display corrupts can usually be diagnosed without much difficulty.

When the whole system is dead, though, you have to start at the mains plug and work inwards from there.

This project isn't for the faint hearted and shouldn't be undertaken by anyone who hasn't got a sound knowledge of electrics and electronics. As it involves testing mains components with the power on, you should leave it well alone unless you are competent.

We value our million and odd readers per year, so if you've the slightest doubt, leave it to a professional.

These notes are by design general and not intended as a step-by-step walk through of a specific machine. Before you work on any machine you should obtain a workshop manual and circuit diagrams and appraise yourself of the positions of any components

DEAD ON ARRIVAL

If there's no sign of life when you fire up your machine you'll have to look closely for clues.

If you use a machine with a removable mains cord such as the ST or Mac, the first thing to do is swap the power cord for one that is known to work. If the machine works with an alternative power cord, the problem's between the mains and the machine. Check the fuse and if that's OK, check the connections within the plug. If it isn't those, discard the cord and replace it.

The mains power cord can be replaced for a couple of pounds so it's a false economy to try and repair a damaged one.

After the mains cord comes the power supply and transformer. All transformers have two things in common. They get warm and they emit a low humming noise. If one or both of these isn't present, there's probably a supply problem.

If your machine has a power indicator (normally in the form of a light or led), and this isn't on, this again points toward a supply problem.

Other than the fuse in the plug, there may be a fuse in line somewhere internally in the machine. The machine should be unplugged and disconnected from the power supply before this is checked.

SOURCE FOR SYSTEMS

A good source of reference that can explain the fundamentals and the more complex parts of commonly used systems and components is a necessity to the DIY electronics hobbyist and repairer. This project is based on information taken from the Electronics Repair Manual, published by WEKA of The Forum 74, Camden Street, London. ISBN 1-85303-010-4.

This weighty tome is a loose leaf binder with regular updates that covers everything from a hairdrier to a computer.



It is important to follow a logical fault diagnosis system to be sure that you don't do more work than you need to. Assuming that you have a fault in the mains power supply, you must test each part of the circuit

The voltage on the secondaries should be checked next. These can generally be found in the middle of the printed circuit board (PCB)

If the secondaries are measuring correctly you can proceed with the next step in the fault finding diagnosis.

Something to remember is that although unlikely, it is possible for the primaries to fail so don't forget to check this if the diagnosis still points to the transformer as the root of the problem.

Continuity in the transformer windings should be tested before it is given up as a complete failure and replaced. If internal fuses keep failing when replaced, you should consider checking the stage of the power

supply after the transformer.

The transformer takes mains AC voltage and converts it to a lower (or higher voltage). In a computer this might be by a ratio of 20-to-one to take the 240 volt mains to 12 volts. The current coming from the transformer is AC and this is of no use to a computer which requires direct current.

The simple route from AC to DC is a bridge rectifier, which is a simple circuit made from diodes. It is possible for the bridge rectifier to break down, usually caused by some sort of live short circuit.

If it isn't the rectifier, other culprits to look out for are capacitors which aren't doing their job. Reservoir capacitors are the ones to look for here – they can develop a leak and instead of maintaining a balanced charge, they will lose it thus putting the circuit at risk.

If you have tested everything mentioned so far and still haven't found the fault, and there isn't a short circuited winding on the transformer (highly unlikely anyway), then it looks as if the problem's somewhere else in the computer.

Over the next few months, we'll be taking an in depth look at some of the common computer components and discussing what causes them to fail. ■

SPECIALIST SUPPLIERS

To undertake repair and servicing work you'll need to know where to get tools and supplies from. Most large towns have a Tandy store and if you can't find a Tandy, there's always Maplin for mail order. Maplin is on 0702 554155.

For more specialised equipment you'll have to scan around. If you find anywhere selling hobbyist bargains, let us know.

The piece of kit that most electronics hobbyists aspire to is an oscilloscope. You can sometimes pick up a bargain, but if you're buying new, you could do a lot worse than invest in a Hitachi scope. Hitachi is on 0532 430294

GET TOOLED UP

For this simple run through the power supply a very basic toolkit was needed. A set of screwdrivers, a multi-meter to test the circuits, a pit of long nosed pliers, a soldering iron, desoldering pump and a few blobs of multicore solder



TECH TIPS

Keith Pomfret takes you back to BASIC designs, keeps you and your laptop on the move, gets the most out of your DTP and prints your points on the best (and worst) hardware around

HELP CPM crash

I have an Amstrad 6128 and also own the CP/M disks supplied with the machine. However, CP/M Plus (Side 1) fails to run when given the :cpm command, resulting in an Effect similar to that of a multi-faced game being loaded without the actual Multiface being plugged in.

CP/M Plus works fine on a friend's 6128, so surely the fault must lie with my machine? In contrast, CP/M 2.2 is trouble-free and works every time.

A while ago, David Wild of DW Software mentioned that the problem may lie with the extra bank of memory. Any ideas?, or is it that my 6128 thinks it's a 464?

Stuart Arnold, Halton, Leeds

IF YOUR CPM disk will work with your friends 6128 and you're getting a machine crash, the problem is definitely hardware. It could be the second bank of RAM that is causing the problem, but there are several other things that it could be too. Take your 6128 to your dealer or repairer and have it checked out. A full diagnostic check will reveal the problem.

HELP Big DTP problems

I'm having big problems using Timeworks DTP on my STFM 1040. Whenever I print out anything I get these blank lines through everything.

My printer is an Atari SMM804 9-Pin DMP. I bought it two months ago, instead of having a holiday this year, so please don't say "change your printer".

I would be grateful for any help you can give me to cure this problem.

Dennis Thatcher, Walthamstow, London

YOUR PRINTER is somehow adding an extra line feed. This can be cured by modifying the printer driver or manually sending the appropriate codes to the printer before firing up Timeworks.

The first is a better and more

practical solution. Printer drivers should be available from Timeworks or failing that, one of the ST PD libraries (try Goodman on 0782 335650).

The second solution requires that you understand a little about the way a printer works and won't necessarily work if Timeworks performs a reset on the printer attributes.

HELP Back to BASICS

Can you please help with a problem. In designing a Basic Program, I am trying to add a column of figures 10 deep. None of the manuals I have read seem to cover the situation with appropriate information. What I have got so far is a line,
350 1 print c\$; tab (8) cu
\$; tab (29) z\$; tab (39) y\$;
tab (49)x\$; tab (59)w

where c\$= client; cu\$= current; z\$ = 30 days; etc.

The idea is to input 10 times as above and then add each of five cols for a total. If it is possible, then perhaps you could help? Do you know of a BASIC users club for programmers? Thank you for any help you can offer.

Louis O'Brien Cheadle, Cheshire

THERE'S A TASK for our programming readers for the long summer evenings. There's a copy of the programming language of your choice for your machine to the most elegant solution.

The solution should be in BASIC, machine code, C, Pascal or Logo, to the usual address

wasn't a problem.

Please give a definitive answer as BR has put a clamp-down on mobile computers, the airlines and airports hate them and now it seems that I'm not free to do as I wish in my car.

Willard Dunster, Richmond

HELP Fount of wisdom

What's the difference between a font and a fount in DTP. (Concise letters rule OK)

Dick Neston, Maida Vale, London

NOTHING. General consensus says that fount is the correct spelling although font is becoming more popular.

HELP Law of the lap

Is there any law against using a laptop computer in a car? I was using a Panasonic 150 in the back of my company car on the way to the airport when I was stopped by the police. They said that it was illegal and that I shouldn't do it, but they were unable to give me any more details.

I wouldn't dream of using it in the front where it could distract the driver and it wasn't at night so the reflection off the windows

ASSUMING THAT the police car stopped you for the computer and not for some other offence, they must have been able to see the screen of your laptop as you passed them.

You are quite right in saying that it would be wrong to use the computer in the front of the car, it is certainly illegal to have a VDU or LCD screen lit up in front of the driver.

I suspect that they stopped you under the same regulations that they regularly stop coaches showing videos to passengers.

A quick chat with motorway policeman, Nick Plod helped to make matters more clear. The reason that they stop coaches showing videos is that the bright screen distracts other drivers. This too could be said of your laptop. Coaches are told to draw the curtains and blinds so that the screen cannot be seen from outside before they are allowed to continue. If you have window blinds fitted to the rear windows of your car, you should be able to compute on the move.

We telephoned around to see what the prognosis is for mobile computing. Top of the heap came P&O European ferries who will give you a desk to sit at and electricity to power your machine. They can also supply other useful services for the businessman on the move.

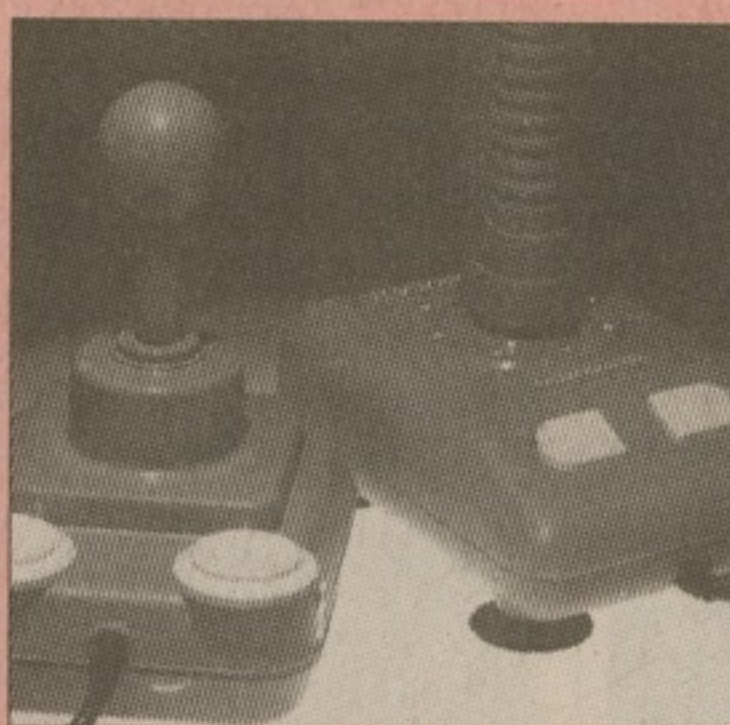
Everyone else seemed to grudgingly admit that while they wouldn't actually stop someone using a laptop unless it caused a nuisance, they wouldn't encourage it either.

HELP 1512 calamities

A question for Amstrad - ever since I got my A1512 PC I have wanted to know why there is a joystick port on the keyboard, when everyone tells me I have got to have a games 1/0 Card + Analogue Joystick. I hope you can help with this Life-Threatening Problem.

Ian Hurst, Wigan

THE 1512 HAS a dedicated port for the Amstrad joystick. The advice that you're getting is pertinent to PCs in general which need a separate games i/o card in an expansion slot in order to be able to utilise a joystick. Trials in the Express lab show that a 1512 with an i/o card is capable of being



• The 1512 can benefit from a joystick but which one? Read on...

controlled by an analogue joystick.

Although it may seem like a waste of a dedicated port, the i/o card is probably more compatible with existing games software than Amstrad's hybrid joystick port.

HELP On the road

At the moment my finances won't stretch to getting a laptop or notebook computer, but I find I continually have a need to work on the move.

So, how can I get my desktop machine to work away from the

office? I've seen fridges, microwaves and the like working from large vehicles, so surely there could be some way to get my small 286 to work in my car? I don't want to lug around a huge generator or anything as it would take up too much space.

Rip Widmark, Felixtowe

YES, IT IS POSSIBLE to do what you want to do. An inverter is what you need which will take your car power (12v dc) which turns it to ac before transforming it by a factor of 20:1 into the equivalent of power from the mains.

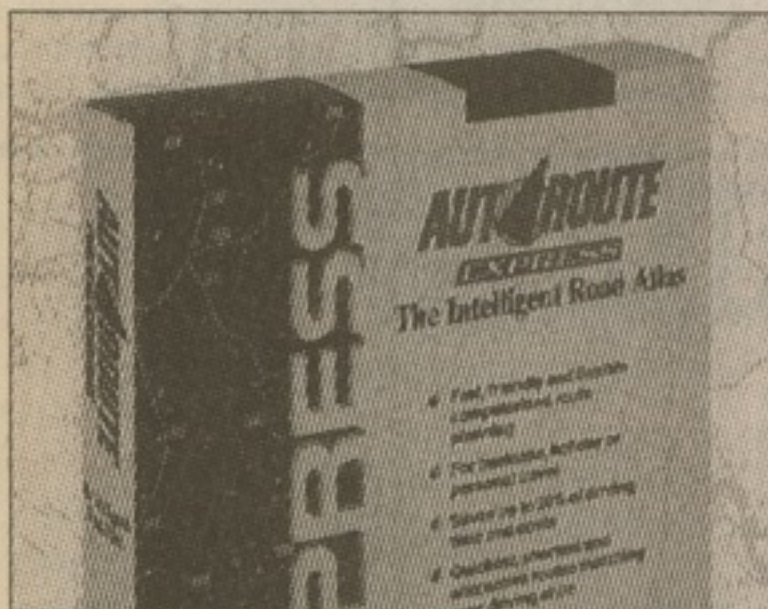
A company such as Maplin should be able to help out and provide the parts to put one together. This will give you around 60w from an average car battery. A little tweaking and a couple of extra batteries under the bonnet could have you computing, cooking and even watching TV on the move (although not when you're driving!)

HELP European routes

At a recent computer show I saw a program that could give a route from anywhere in Europe to anywhere else in Europe and do all sorts of clever things like cost the journey and add in drivers' hours.

I use an Opus PC IV with a VGA display and a 40Mb hard drive and want to know if this sort of journey software will run on it. Also what is the program called? I'd need to dump the routes to an Epson Laser Printer too.

Caroline Jones, Cardiff



• Half an hour up the by-pass or a 3,000 mile trek across Europe: Autoroute and Pan European Navigator take the guess work out of route-planning.

THERE ARE TWO software packages that do the job that you describe – *AutoRoute* and *Pan European Navigator*. Both are good, well specified packages that will work with your computer and printer.

Navigator is a full and specified product with all of the bells and whistles provided in the basic package.

Autoroute allows you to take a core product and add the features that you need as and when you want them.

NextBase publishes *Autoroute* and is on 0784 460077. DPS publishes *Navigator* and is on 021-585 6633. ■

HELP Getting it off your chest

This isn't going to turn into a 'my machine's better than your machine' debate, but if you've something relevant to say and a reason why you're happy with your current hardware, write to: Getting it off your chest, at the normal Tech Tip address.

We kick off this week with a letter from David Pitcher of Norwich, who has worked his way around the machines and chosen a rather surprising favourite...

"Many tales of woe and maltreatment by hardware companies have appeared on your letters page since time began.

When compared to those that actually praise a computer firm, the amount of praise fades into insignificance.

I recently purchased a new computer, following my own advice, as I have over a decade's worth of experience with new computers. During these ten years I have gained considerable experience on the ST – a very underestimated machine, the C64 – was good in its time, but had a very sloppily designed graphics output

Even then, the Spectrum – an excellent little computer and suffered greatly at the hands of Amstrad's (lack of) development team in the +2 and +3 incarnations which suffers from the same problem (but much more so) than the Commodore.

The Amiga – a very special computer this one, but it suffers from the lack of an immediate upgrade; the price gap between the 500 and 1500 is just too large and does not offer any real hardware changes (like the ST does to the STE) such as graphics and sound or processor speed even though various stand-alone upgrades are available.

The lack of a new standardisation which should fill the gap up to the A3000 is forcing the machine gradually, but not noticeably (so far), out-of-date – a criticism levelled at Commodore technology into the 90s – until then a large hole exists and Atari can plug this hole in the coming years, if Commodore does not act soon.

I have also gleaned wide experience on the Acorn Archimedes and what a beauty it is too.

So, you may be asking, what is the point of this letter (having thrown myself off the point in several places)? I have written to you to complain about the major reasons why I did not choose to continue with the computers:

1) Piracy: there is no denying the fact that software prices have remained high because of the swopping of copied games reducing the sales of the aforementioned product, the steady prices have encouraged more into software piracy coupled with the recession. But the fact that prices have stayed the same in number does show that they have dropped in value if you take inflation into account.

Do not be fooled into thinking that dropping prices will reduce piracy. Piracy is a result of the combined factors of the current social and economic climate, it is a symptom and even though it is possible to stop the symptom from rearing its ugly head, the underlying illness of the human mind will still be there. "Something for nothing" is the mentality of software pirates and this state of mind will only exist in large numbers when the economic climate worsens.

All the pirates are doing is bringing down a society of mutual distrust on themselves in which a software producer will find itself no longer able to trust the end user and move to other markets. Meanwhile the innocent buyers and programmers are suffering. I am totally sick of software pirates and piracy, which is why I have bought myself a computer that is not plagued with this problem and whose userbase is more respectful of the computer industry.

2) The lack of originality and real innovation on the above computers; they have all (bar the Archimedes) been stretched to their limits. There is no "new" way of doing things on these machines – they have been too sufficiently explored and I find them a little boring.

3) Amstrad....need I say more

What I needed was something new, something relatively



•The Sam Coupé – superb chip display, useful MIDI and sequencer and much more. Well that's how one Express reader sees it.

unexplored. A new computer, a REAL new computer with different structure (the STE and AMIGA are relatively similar as are the "8-bits") but which also combined all the best parts of the other computers and also offered something of its own.

Secondly I wished to place my money behind an innovative and decidedly "kicking" manufacturer with new ideas and a fresh perspective on the industry.

Thirdly that manufacturer had to care for the customer and provide helpful advice when I needed it.

I bought this computer less than a fortnight ago and it is amazing – just what I wanted. The very impressive specs live up to their promises and more with its own brand of multi-tasking I stand amazed.

No this is not a NeXT – this computer is Samco's Coupé, the display chip is quite frankly superb and the 6-channel stereo sound chip by Philips is of excellent quality. The MIDI ports and sequencer make it all the more useful to me and blow the STE out of the window in many areas.

The art package is fairly impressive, but surely an upgrade is on the cards to take advantage of the 128 colour capability, the only annoyance is the lack of a mouse (although I am told that one is now available). And I am looking forward to the forthcoming release of a video digitiser.

This letter is meant as a public appraisal of Samco's excellent service and the brilliance of its new machine. I am very pleased with it and I await, with anticipation, of news of Samco developments of a higher spec machine (the Coupé II?).

Software support seems to have rocketed in the past month with not only Domark and Enigma Variations supporting the machine, but many smaller houses are developing software for the new machine. Word from a fairly reliable industry contact indicates interest from Ocean and possibly US Gold, however not having contacted them myself I am unsure of this development. For now Enigma Variations and Domark can take advantage of the machine fairly undisturbed and a fairly good job they are doing as well.

Congratulations on an exceptional magazine (although bias does creep in on some areas, but that could happen on any publication) and I hope that you soon re-instate the Coupé column now that its problems of last year are firmly behind it.

Here's to the computer industry improving in character and in strength."

Can you do better? Would you disagree with the scathing comments about the ST and the Amiga or the praise of Sam and the Arc? Do you feel that piracy is a result of the socio-economic state of the country or is it plain thievery?

Climb on to your soap box and join in the gavel-banging.

Write to Keith Pomfret, Tech Tips, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW.

COMPUTER BARGAINS

Hercules 12" amber monitor (12v).....£29	5 1/4" 720K drives.....£35
Hercules 12" amber monitor (240v).....£49	5 1/4" 1.2M drives.....£45
Amstrad PPC1512 SD (no manuals).....£149	5 1/4" 360K drives.....£30
Amstrad PPC1640 SD (no manuals).....£179	PC power supply with fan, on-off switch.....£25
Amstrad VGA 12" paper white monitor.....£69	3" drives (6128, PCW etc).....£30
Spectrum +2 with manual and psu.....£89	Amstrad CPC464 (no manual).....£80
Spectrum +3 with manual and psu.....£109	Amstrad CPC6128 (no manual).....£140
Spectrum +2 power supply.....£18	Amstrad GT65 monitor.....£49
Spectrum +3 power supply.....£18	Amstrad SM2400 modem.....£99
Amstrad DMP3000 9pin printer.....£69	3 1/2" 180K drives (BBC etc).....£22
PC modems (no data, no software).....£18	3 1/2" 1.44M drives.....£39
CCTV systems (inc camera and monitor).....£99	PC1512DD inc colour monitor.....£245

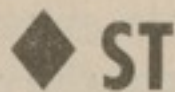
SCS COMPONENTS

218 Portland Road Hove Sussex BN3 5QT

All prices are subject to VAT plus £2.50 P&P

Telephone orders: 0273 770191 Fax: 0273 23077

Visa/Access (Trade enquiries welcome)



● **THIRD** Coast 65 meg hard disk, £375. NEC P2200 plus sheet feeder. £170. SM124 monitor, £80. 1040STFM, £170. SM124 monitor, £80. Timeworks DTP £30. Neo desk, £15. FTL Modula 2. Dev £50., plus games £10-£20. All as new. Tel 0628 25802.

● **ATARI** 520STFM, one meg memory, over £700's worth of games, including F-29, Xenon 2, Falcon, Chase HQ, Xenon and the brilliant music package quartet. Excellent condition, boxed everything for only £300. Tel (0207) 520975.

● **520STFM**, excellent condition, 1 meg internal drive, £1300 of software, including Kick-Off 2 and Powermonger. £50 of magazines, demos, all leads, and mouse. Boxed with original wrapping, + joystick. Call (0403) 50570. Ask for Ben. Price £250.

● **ATARI** colour monitor SC1229, £180. Atari mono monitor SM125. £80. 071 4357664.

● **ATARI** STE 1 meg, 200+ disks, disk boxes, joysticks, extender leads, mouse mat, dust covers, books, manuals, 100+ N.C.E.'s. ST/Amiga Format 1-13. ST Format 1-25. Phone Ian on Leicester. (0533) 701107 after 6pm. £650 o.n.o. Will split.

● **FLEET** Street Publisher v3.0 for Atari ST/E for sale. Original version complete with full manual and quick reference cart. Serious offers around £100 invited. No time wasters please. Phone Fraser on 031 553 2356 for details.

● **ATARI** ST/E PD available for exchange or sale. Over 1300 disks to choose from. Send blank disk plus SAE to: 27 Rosslyn Terrace, Edinburgh, EH6 5AU. For disk based catalogue or phone Fraser on 031 553 2356 for details.

● **ATARI** 1040STFM, 20Mb SH205 hard disk, SF314 disk drive, SM124 mono monitor, joysticks, mice, loads of games, FM Melody Maker, STOS, clock, all boxed. Very good condition. £450. Call Toby on 0252 616057 after 6pm.

● **65MB** hard disk for Atari ST, plus hundreds of PD programs, £350 o.n.o. Phone Steve 0923 265539 (Watford/Hemel area).

COMPUTER REPAIRS

Amstrad ☆ Commodore ☆ Sinclair ☆ etc.

Free Estimates. For further details phone

HawkWell Electronics, Southend

0702 207593

● **ST STRATEGY** and War games plus other titles for sale. All boxed originals from £5 inc p+p. Also approx 500 3 1/2" disks new £25. For 100 inc p+p. Megadrive games wanted. Phone 0903 767030, Sussex, evenings.

● **FOR SALE!** Timeworks with clip art pack and extra fonts and Degas Elite with 100's of extra fonts! Bargain at £80 o.n.o. Write to: 14 Killydrum Road, Derrygonnelly, Co Fermanagh, N. Ireland, BT93 6FP., or please phone (036504) 354.

● **NEW PD** compilation disk for the Atari ST/E. Send SAE for details or £2.50 for a disk stating disk number (1-5). Cheques/P.O. to: A Burns, 61 Coniston Road, Gunthorpe, Petersborough, PE4 6UL.

● **ATARI** 520STE, 1Mb RAM, SM124 monitor, Cumana 2nd disk drive, Naksha mouse, PC-Speed Emulator, some ST/PC programs. All under 1 year old, mint. £430, no offers. Tel Chippenham (0249) 656702.

● **ATARI** ST software - Kroget £10. Turbo ST (Blitter), £10. Quantum Knight £10. Neo desk £10. Knight Orc £8. Leather Goddess £6. Ninja Turtles £6. Robocop 2 £6 inc postage. 0529 304221.

● **720K** upgrade disk drive for Atari ST. £30 TOS 1.4 six chip ROM set includes fitting instructions £40. SF314 1 meg external disk drive, little used. £75 +p+p. Phone Pete (0322) 662747.

● **520STFM**, IM(DS) internal drive, SS extension drive, Star LC-10 colour printer, Sega MS, plus £650 worth of original boxed software. Also books and miscellaneous disks, worth over £1300. Sell for £700 o.n.o. Tel: Michael (0846) 670670.

● **STE** Sims for sale 2 x 256K with fitting instructions and sip adaptor for older STE's only £25. Wanted, used Deskjet ink cartridges. Call Jeremy on 081 363 1578.

● **ATARI** 520STFM, 1Mb memory, 1Mb disk drive. Atari SM124 Hi-Res mono monitor. Steinberg Pro 24. Casio HT-700 midi keyboard 8-note Polyphonic, PCM drums, fully programmable, stereo chorus, pitch bend, 49 small keys. £500 o.n.o. Phone Mark 0744 21691 (Merseyside).

● **MICROSOFT WRITE** for sale, best offer gets it. STE 1 meg Simms upgrade. £25 with Sip adaptor if needed, portfolio 2 interfaces and mains adaptor. £150 o.n.o. Tel 081 3631578 ask for Jeremy.

● **ATARI** 130XE 1050 disk drive, Touch Tablet, joystick, mouse, Print shop, Paperclip Movie Maker and many games. £100. 081 2914094.

● **ATARI** ST PD for the cheapest PD around. Write to: Prophecy PD, 390 Coulsdon Road, Old Coulsdon, Surrey, CR5 1EF, enclosing disk and SSAE, please note: slam is a lamer.

● **ATARI** 520STFM, 1 meg D/S internal disk drive, 1 meg memory, original software titles, plus public domain software (demos, utilities) joystick, mouse controls, manual, leads, mouse, joystick, extension leads, mouse mat. £300. Tel 081 336 4551.

● **ATARI** 520ST Tower System, mono colour monitors, Citizen 120D printer, Golden Image mouse, mono colour switch box, games, M1 Tank Platoon, MIG 29 and more, including Word Writer ST only. £900. Ring Tom after 6.30. 0344 24396.

● **ATARI** 520ST, 40+ games, 1st Word Plus, Timeworks DTP and SM124 Hi-Res monitor, Quickjoy joystick (1Mb drive) £420 +. Phone Adam on 0947 810552. Please note price, new is £800+.

● **WANTED** back issues of the STOS newsletter. Will pay 75p per copy. Send list to: S. Raynes, 3 Union Terrace, Castletown, Penrith, Cumbria, CA11 9DY.

● **ATARI** ST, 4 meg memory, £199. Atari 1040STFM with SM124, £350. Hawk Calbre scanner. £300. Tel (0495) 272358 after 6pm.

● **ATARI** 520STE 1 meg upgrade expanded plus free games: £240. Atari SM125 b/w monitor: £60. Cumana 3.5" drive: £60. Steinberg Pro24: £60. All as new condition, no boxes, so buyer collects. Contact: Jerry. 0491 571779. (Home) after 6pm.

● **ATARI** ST public domain software to swap or copy to your disks for 34p. All types of PD wanted. Send your list and SAE now to Richard Kirk, Copes Farm, Withington, Leigh, Staffs, ST10 4PU.

● **ATARI** ST games and business software for sale. All originals, Switchblade 2, Awesome, Shadow Dancer etc. Calamus + font disks. Ring 0773 717911. Also Midwinter 2, Monster Business. Toki etc Gods.

● **ST ACTION** magazines Nos 1-37 (May 88 - May 91), includes disks £30, including p+p. Also Atari ST Elite £10. Please write to Stephen, 8 Roddens Gardens, Castlereagh, Belfast, BT5 7JJ, N. Ireland, or phone (0232) 798559.

● **ROLAND** MT32, 32 voice, 8 channel, midi expander, 30PCM drum sounds with Steinberg ST Synthesizer Editor, plus 300+ sounds. £250 o.v.n.o. Roland Axis remote midi keyboard, £250. Wanted: midi drum pads. 081 591 5585 after 6pm.

● **ATARI** 520 STFM, SC1224 colour monitor with swivel stand, monitor switch box, replay 4 sampler, mouse, manuals, leads, £250 of software originals, boxed as new. £400. Also ST Format and ST User magazines available. Telephone Andrew: 081440 7738.

● **PUBLIC DOMAIN** software for the Atari ST, only £1.75 including postage, clip art, games, utilities, exclusive samples, demos slide shows, send SAE + 50p for catalogue to: Mr. G. Ogden, Nightshift, 8 Bertelin Road, Stafford, ST16 3JJ.

● **ATARI** 520STFM, one meg second disk drive, £300 software, sound sampler, computer to Scart lead, complete with all manuals + boxed as new, £250. Contact Neil 0425 616605

● **PD LIBRARY OWNERS?** Still using 'FCopy III'? Get the latest 'FCopy Pro' from Jennix PD, the very best Atari copier. Send Cheque for £1.90 (Jennix PD): 66 Abbey Road, Strood, Kent, ME2 3QB.

● **ATARI** SF354 3 1/2 single sided disk drive, two months old. £35. Seikosha SP-180AI 9PIN printer, £85. Both items come with manuals. Telephone Daniel Fuller on 071 515 7814.

● **15 3.5"** disks for £1 with labels, all including p+p. Get the most out of your ST + 2 disks for £8. Also Syncro Express II instructions + operating disk. £12 for more information. Call Den on 081 7712969.

● **VIDEO** digitising, I will digitise anything from video source. Details Write to: Mike N., 9 Ashburton Avenue, Ilford, Essex, IG3 9ET.

● **ATARI** SM125 mono monitor, £90. SH205 20 meg hard drive, £190. Kaga Taxan 810 9pin NLQ printer, £70. Timeworks DTP £30. Atari STM, not working, main unit only £40. Tel 071 586 6155.

● **ATARI** 520STFM with one meg drive, upgraded to 1 meg RAM, mouse, some software, two joysticks, £250 o.n.o. Tel: 081 761 3082 ask for John after 6.30 evenings.

● **NEW PD** compilation disks for the Atari ST/E. Send SAE for details or £2.50 for a disk stating disk number (1/5). Cheques /P.O. to: A Burns, 61 Coniston Road, Gunthorpe, Petersborough, PE4 6UL.

● **ATARI** Mega 4 with QL and AT-Speed Emulators plus software and manuals. £825 AT-speed complete £125. All items in perfect working order. Any test. Tel: 081 889 4276. Tottenham, anytime.

● **ATARI** 520STFM with Citizen 120D printer, 2 joysticks and over 140 disks. Paper and leads. £350 o.n.o. Tel: 0302 782122.

● **ATARI** 520STE includes over £250 worth of original games plus loads of computer and demos, 2 joysticks for £250 o.n.o. Phone York. 0904 642056 after 5pm. Ask for Cliff. All boxed, mint condition.

● **ATARI** ST, 1 meg RAM, SM124 monitor, Citizen 120D printer, much software including Timeworks, First Word Plus, Superbase, VIP, Neodesk, Font kit + Harlekin and much more. 2 years ST-User, ST Format and disks. £450. Tel (0923) 36724.

● **ATARI** 520STFM, 1 meg disk drive, mouse, joystick, plus over 40 software titles worth over £900., including DPaint, colour monitor and colour printer, all with cables and all boxed. All worth over £1500. Sell £1000. (0480) 450457.

● **ATARI** STFM, games etc, £150, Star-LC10 printer, (as new), £65, Nintendo Nes SMBI + II, others. £75. Amstrad 464, no monitor, hence £40. PAL PC Engine + games, £90. Details write: RK, 4B Currents Lane, Harwich Essex, CO12 3DE.

● **STATE** 808 PDL the best for ST Public Domain demos! Our new disk catalogue is available free if you send us a blank disk to: State 808 PDL, 3A Old Lanark Road, Carlisle, Scotland, ML8 4HW.

● **SIMMS!** 256 X 8, 80ns Simms for Macintosh. Should suit Atari STE, £20 per pair, 520STE - 10400STE upgrade, comes with instruction sheet fitting. Call Richard on (0573) 26032.

● **ST EXTERNAL** 1 meg drive with PSU, also 32 meg hard disk. £40 + £200. Tel 07532 685288 evenings.

● **ST SOFTWARE**, Devpac 2, Fast Basic Roms, Lattice C. Mavis Beacon, Elite, Falcon, Neo Desk 3, 1st World +, PFM, VIP Pro Superbase Personal. Phone for prices. 0753 685288 evenings.

● **WANTED** Dead Mega ST. Any condition, cash waiting, would consider other dead ST hardware. Tel 0753 685288 evenings.

● **65 MEG** 3rd coast hard drive, £350. 1040 STFM £170. SM124 monitor £70. NEC P2200 + plus sheet feeder £150. Lattice C V5 £85. Timeworks DTP, £30 plus more software. All as new, all o.n.o. Tel: 0628 25802.

● **ATARI** ST/STE programmers. Will anyone write a GEM based catalogue disk for PDL. Reward 8 disks PD! Over 500 to choose from. Contact NSK @ 66 Abbey Road, Rochester, ME2 3QB. 100% reply guaranteed!

● **ATARI** STFM d/s drive, superb condition £900 - Games Applications, Star printer, all boxed. Worth £1400 + all for £399 o.n.o. Phone

inc VAT

CLEAROUT

inc P&P

MOVING SHOWROOMS WE HAVE SURPLUS AMIGA EQUIPMENT FOR DISPOSAL

Podscat 12" x 12" tablet with driver, new RRP £253	£190
Cherry Mk3 tablet with driver, new RRP £587	£350
DigiView Gold inc stand & camera, RRP £360	£200
Sharp JX720 colour ink-jet inc Amiga driver, new	£600
Art Dept software, new, RRP £71	£35
Polaroid Palette + Liquid Light, new, RRP £2215	£1500
Colour Pic + 1Mb ram, new, RRP £511	£300
Sharp JX300 colour scanner + board (Amiga 2000)	£2115
20Mb ST506 Hard Disk	£100
Omnimem laminator	£400
5.25" Library Cases (60 per carton)	carton £25
Xerox 4020 colour inkjet	£400

RAINBOW COMPUTERS, 1A HINCKLEY ROAD, EARL SHILTON, LEICESTER. (0455) 840106

● **ATARI** STFM, good condition, joystick, etc, only £160. Also Nintendo +5Mb 1+2 + others, £90. Remote Car, unused, new, only £55. Also PAL PC engine dirt cheap, for details write: R.K., 4B Currents Lane, Harwich, Essex, CO12 3DE.

● **FOR SALE** original business and educational software for Atari ST at reduced prices. Send SAE for lists to M. L. Tomlinson, 13 Holme Road, Bingham, Notts. (No cheap copies).

● **ATARI** 520 STFM, single sided drive, hundreds of pounds worth of software, including Devpac, STOS, GFA Basic 2, and many games. Requires new mouse, hence only £175 o.n.o. Telephone Shekar on 081 8843114.

Adam after 6pm. 0932 243186. All manuals, 3 joysticks.

● **ATARI** STFM double sided drive, £1000 of software, three joysticks, Star SR10 not Matrix printer, all for @£230 o.n.o. Phone Adam anytime. 0932 243186. Bargain, I must be mad!

● **ATARI** ST/STE PD software for sale. 500 disks @ 90p each. Send 50p for disk based catalogue + free PD to: Jennix PD, 66 Abbey Road, Strood, Kent, ME2 3QB. Jennix; better than the rest!

● **WANTED** A1500, Basic Dual Drive version, offer £450. Also 52 meg or larger hard card for A1500, offer £150. Phone Ian (0928) 701222.

100 DS/DD DISKS + 1 x 100 Cap Box + Labels ONLY £40. inc

100 x 3 1/2" Disks
100 Cap. Box
100 Labels
£40.00!!!
MF2DD

FREE P&P

Same Day
despatch on
Access/Visa/P.O

100 DS/HD Disks + 1 X 100 Cap Box + 100 labels

£65.00
MF2HD

KC VIDEO
6+8 DONCASTER RD
SOUTH ELMSALL
NR PONTEFRAC, W. YORKS WF9 2HZ

Cheques payable to KC VIDEO

Tel: 0977 - 649100 (Fax: 0977 - 643312)
Mail order only - Loads Atari + Amiga goodies - price list available

AMIGA

● **AMIGA PD** 80p per disk which includes p+p. Catalogue disk, 80p, with free PD, including Humanoid "Cry Baby" demo. ST, Amiga, Spectrum originals from 50p! Chris Jackman, 3 Albion Terrace, Lexham Road, Litcham, Kings Lynn, Norfolk, PE32 2QQ.

● **PANPAAL** datascan b+w hand scanner, new with manual, s/w, leads, boxed, unused £150. Pandaal datadrive 3.5" disk drive with switch, boxed, £60. 512K RAM expansion clock, switch, £35. Philips AV7300 TV tuner. £45. Neil 051 426 0138.

● **VIDI** Amiga digitiser with vidi chrome and scart lead, plus ten original Amiga games and two joysticks, all this for £100. Phone mark on 0509 844166.

● **AMIGA** user international Nov 89 - May 91, 16 issues, £20. Amiga World (U.S.A.) April 90 - May 91, £15. All include p+p. Please write to Stephen, 8 Roddens Gardens, Casterleagh, Belfast, BT5 7JJ, N. Ireland or phone (0232) 798559.

● **COMPUTER** Express magazines 36 in all ranging from 13 to 138, for sale at £8 or any other offer considered on: (091) 454 2056.

● **AMIGA** wanted £200 waiting will throw in Hi-Fi if Amiga has extras and is sent for testing. Callers welcome, but only weekends. Also contacts wanted, no pirates yet. Paul, 3 Mooreend Avenue, Chelmsleywood, Birmingham, B37 5SD.

● **WANTED** colour monitor with stereo sound to suit ST/Amiga. Also wanted Amiga A500 1.3 version required, external drive, 1 meg memory. Must be mint. Please write: Tanya Williams, 3 Woodward Road, Crosskeys, Newport, Gwent, South Wales, NP1 7BR.

AMIGA B2000, 10845 colour monitor, external floppy, LC10, B/W printers, midi interface, soundtrap sound trap sampler, also Lattice C ver 5.02, Amos, Music, X plus loads more software. All for just £550. Phone Andrew. 0695 31765.

FOR SALE: Amiga upgrade to 1meg, lots of software, games applications, DTP utilities, some still boxed, including Amiga. Very little use and in mint condition. £380 o.v.n.o. No time wasters please! Tel: 071 7907499.

AMIGA 2000 bridge board XT +51/4 disk drives + software + manuals, hardly used. £199 o.n.o. + modem + software. £45 o.n.o. Still in box. Tewl (0602) 616996.

AMIGA 500 boxed, still guarantee screen GEMS pack plus C-Light 3D graphics pack and PD disks plus joystick and magazines for £300. Phone Linden on 081 961 3758.

AMIGA (512K) Agnus Chip, £15 plus free game. Standard mouse, £8. Bantam AmigaDos manual 2nd edition, £10. All plus p+p. Also wanted Fred Fish PD disks. Tel: Gary 0473 713715 between 6-9pm. Thank you.

3D CONSTRUCTION kit, unwanted gift, without tutorial video, boxed, unregistered. Bargain at £20. Phone Dave 0705 552940.

CBM Amiga with half meg upgrade and over £1200 worth of original games, demos and magazines. Worth £1500, sell for £500. Also Gameboy for sale, including leads and two games. £50. Tel 021 447 7005.

AMIGA A500, 1 meg second drive, Philips 8833 stereo monitor, excellent condition, plus loads of games, demos etc. Manuals, two books. £700 o.n.o. Please ring Nick on (0703) 435609.

● **AMIGA** nightbreed for sale. £4. Modulator £5. Wanted cheap sound sampler, will pay £5. Will pay up to £35 for Amiga Action Replay cartridge. Phone Nick 081 979 5712.

WIN WIN WIN WIN WIN WIN WIN

A MEGA MAIL ORDER VOUCHER

DIAL: 0898-886-200

CALLS CHARGED AT 34P/45P A MIN. UOD LTD, CA2 5BB

● **COMMODORE** Amiga A500, 1 Mb RAM, TV modulator, midi interface, large educational software package including DPaint II, Publishers Choice, DRT's Recording Studio, BBC Emulator and much more. Never used. Unwanted prize. £400. Phone Richard on (0372) 277887 (Surrey).

● **AMIGA A500**, 1 meg upgrade, external drive and Olivetti printer, word processing software plus lots of games. All less than a year old, must sell quickly. £650 o.n.o. Contact Mike, Pontefract. 0977 791443 after 5pm.

● **BACK** issues, Amiga Format 1-21 including cover disk £3.50 each. Amiga Action 1-15 £2.50 each. Crash magazine 1-48 in binders, offers p+p included. All in excellent condition. Tel (0752) 553169, Daytime or (0752) 265438 evenings.

● **AMIGA A500** 1Mb RAM, external drives, joysticks, software, public domain, sound sampler, magazines, programming books, stereo amplifier, Panasonic video, Aiwa cassette deck, all in good condition. £600 o.n.o. Call Ray on 021 327 5931 (Birmingham).

● **AMIGA A500** + 1/2 meg upgrade, Cumana 31/2" drive, TV modulator, Amos + ten originals, £275. Also Sega Mega Drive + six games, Philips 8833 stereo colour monitor. £250. Phone Nick (0695) 31765.

● **AMIGA 1000** with Philips colour monitor, joystick, mouse and mat and £500 of games. Also magazines and blank disks. All in excellent condition and boxed, cost over £1500. Sell for £600. Telephone 0706 218251.

● **KCS** PCXT Emulator, you've read the reviews, it's brilliant. Fits neatly onto A590 expansion slot. Genuine reason for sale. Bargain at £170. Phone 081 3905 2525.

● **A590** hard drive, 20Mb Western Digital mechanism, populated to 2Mb, sell for £275. Tel Maidstone. 0662 720142.

● **CONVERT** your external Amiga disk drives into variable speed models for improved data accuracy. Conversion really requires small case modification but send SAE for details: Stephen Barr, 16 Ogilvie Road, Stirling, Scotland, FK8 2HJ.

● **AMIGA A500** Philips monitor, extra memory and drive, control centre, over £1000 worth of software, including Amos, will sell for £560 or nearest offer. Also vidi Amiga, TV tuner, £40 each. Ring Dermot on 0276 76156.

● **AMIGA 2000**, 1 meg Chip RAM, XT Bridgeboard, 51/4 and 31/2 disk drives, 20 meg auto booting hard drive complete with manuals, software and box. £649. Call 0923 227360.

● **A500 21/2** meg, 43 meg, A590, extra 31/2" drive, vidigrab vidichrome, vidi RGB, technosound Turbo, joystick, scart lead, PD and games, magazines, mouse mat, spare A520, only 3 months old. £1000 o.n.o. Buyer collects. Ring Gary (0270) 766462.

● **AMIGA PD** 75p per disk catalogue disk 75p. SAE for details update help for new new and beginners. Please write: M. Daniels, 13 Churton Road, Rhyl, Clwyd, LL18 3NB.

● **AMIGA A500** with software etc £320. Excellent condition. Atari 1040STFM with mouse, manuals etc. £320. Also excellent condition. New car forces regrettable sale. Telephone (0495) 272358. No timewasters please. Also Amiga software. £10 a titles.

● **AMIGA** flicker fixer card, £95. 2000 internal genlock £75. Teletext adaptor, £95. Cumana 51/4 drive with 300 PD disks. £100. Digiview gold with camera 31/2 disks £35 for 100 used, in Amiga. Please phone 0527 541526.

● **PLEASE** help a poor student who needs an Amiga hard disk drive (cheap) for his studies - computer and Eng. Bscons. I'm nearly broke! Please contact Paul, 17 Briars Close, Long Lawford, Rugby, Warks, CV23 9DW.

● **CLIP ART** for Amiga £1 per disk, if you have art of your own I will scan and transfer to disk for you. Also specials done, let me know what you want. 50 Foxhove, Coulby, Newham, Middlesborough, Cleveland, TS8 0RU. All £1 a disk.

● **JAY-DEE'S** PD, only 40p a disk. Loads Amiga disks for everyone. For a catalogue, send a disk and SAE to Jay-Dee, 389 Scalby Road, Newby, Scarborough, North Yorkshire, YO12 6TG. Catalogue disk and demos updated every month.

● **AMIGA PD**, 800 titles, 60p each. Also wanted A590 hard drive and original games. Tel (0742) 781490.

● **AMIGA PD** library for latest good demos, send disks, return postage. Mark, 50 Victoria Avenue, Sleaford, Lincs, NG34 7LN. Ask for catalogue. Some demos are not allowed in PD libraries that make a profit.

● **AMIGA** Flicker Fixer £95. Internal A2300 Genlock for A2000 £75. Digiview Gold with BW Camera, £115. 3.5 disks only £35 for 100. Also original software for Amiga, please phone. 0527 541526.

● **GOT A MODEM?** Got an Amiga? What a combination! Now call the budget BBS for all your PD needs. 021 311 1068, 24 hrs. v21 v22 v22bis.

CHOICE Software

144 London Road,
Highfields, Sheffield S2 4LT

Tel/Fax: 0742 555894

SONY KOA 3.5" Bulk Disks Ideal for Amiga/ST/PC

Pack of 10.....£4.25
Pack of 25.....£10.09
Pack of 50.....£19.66
Pack of 100.....£37.19

(Quotes for larger quantities available)
Banx Stackable Box (80+ Cap) £11.99

Please add £1.80 for 1st Class
post and packing to all disk orders.

All disks 100% certified and fully
guaranteed, 2 for 1 replacement on any
found faulty.

Amiga/Atari ST Public Domain,
Send 9" x 6" SAE for free catalogue disk

Please make cheques/P.O payable to Choice Software,
Or ring the credit card hotline above.

Open Mon-Sat 9.00am - 5.30pm CALLERS WELCOME
ALL PRICES INCLUDE VAT

1st For Value

1st For Service

1st For Choice

● **1 MEG A500**, 45 meg Xetec hard disk, 8852 colour monitor, one external drive, 15 free games. £900. Phone Aberdeen. Zaki. 0224 272813. Office hours.

● **N. YOUNG**, Northfields, Drift Road, Stamford, Lincs, PE4 1XA. Amiga software: Loom £10, Star control £5. Bait £5. Robocop 2 £5. Final Command £6. Monty Pythons Flying Circus £6. Gremlins 2 £5. Days Of Thunder £5, Silk Worm £2. Shadow Of The Beast 2 £10.

● **CDTV** for sale + 3.5 inch external drive, one month old, Sim City, Lemmings, Hutchinsons Disk, Defender Of The Crown plus two Amiga games, £550 o.n.o. Phone James on 0756 794802 after 6 o'clock.

● **A500**, 108.4 colour monitor, plus stand, megabyte expansion, extra disk drive, CBM MPS1230 printer, loads of disks, 100's of magazines, 2 joysticks, 2 mice, disk boxes, etc. All boxed. £550. Tel 0422 378662. (Steave) West Yorkshire.

● **AMIGA PD** over 500 titles from 55p unbranded to 75p unbranded (p+pinc). Send 9" x 5" SAE or Catalogue to Darrel Beckwith 1065 Manchester Road, Linthwaite, Huddersfield, HD7 5LS. All letters answered.

● **3 MEG** Amiga A500, 20Mb hard disk, 4 drives, stereo sound amp, full digitising set up, loads of software. Sensible offers or swap for fast PC system. Phone 0903 210279.

● **A500** configured for 1Mb Chip RAM with 4Mb expansion, A590 hard drive with 2Mb fitted, second 2.5" drive plus 40PD disks and boxes. All for £850. May split, call 092575 5316 Cheshire.

● **AMIGA PD** swappers club send your list and I will send all the ones I have along with addresses of other members. Send to Dean Smith, 35 Rolleston Crescent, Watnall, Notts, NG16 1AU. PS don't forget SAE.

● **AMIGA PD!** Over 350 disks available, you simply send extra blanks for my time and cost. SAE for details and listing. Enclose a blank for free demos. David Hopkins, 70 High Street, Delaboule, Cornwall, PL33 9AH.

● **AMIGA** standard mouse and pocket, £10. (includes free Honda RVF game). plus p+p. Bantam AmigaDos manual 2nd edition £10, or swap for F-15 Strike Eagle II. Tel Gary 0473 713715 between 6-9pm only.

● **AMIGA A501** 1/2 meg RAM and clock memory upgrade, £25. Phone Steve on 0293 532571. (Crawley West sussex). evenings.

Spasoft Computer Services

Atari TT030/2 2Mb RAM, 40Mb Hard Disk,
Colour Monitor.....£1999
Atari TT030/8 8Mb RAM, 40Mb Hard Disk,
Colour Monitor.....£2499
Atari Lynx Console & Paperboy Game.....£99
Atari Portfolio Pocket PC.....£179
Commodore CDTV & Defender Of The Crown

Game.....£549
CBM Amiga 512K.....£299
CBM Amiga 1 Meg Screen Gems Pack.....£359
CBM Amiga 1500 Pack.....£649
Philips CM8833 MK2 Colour Monitor.....£249
Sega Mega Drive & Altered Beast Game.....£139
Sega Game Gear Colour Hand Held.....£94

Phone For Our Trade In Prices. Send SAE For Full Price List. Make Cheques/
PO's Payable To SPASOFT. Send To: Spasoft (E1), 123 Mason Avenue,
Lillington, Lemington Spa, Warwickshire, CV34 7QF Tel: 0926 413706

● **WANTED** A590 hard drive with two megs RAM, offer £200. Phone (Runcorn). 0928 701222.

● **10 DISKS** of Amiga PD, clip art, quality media, all disks full and virus free. £7.50. Also 5 disks of brush (colour) and assignable fonts. suitable for DPaint etc. £3.75. Tel (0636) 71275.

● **SUPRA** hard card with 48Mb Seagate SCSI1 drive for A500/2000, only three months old, still guaranteed, complete with all manuals, disks and Express copy. First £280 secures. Telephone 0925 755316 for more information.

● **AMIGA PD** only 75p per disk. SAE for details. Catalogue disk only 75p. Please write to Mr M Daniels, 13 Churton Road, Rhyl, Clwyd, LL18 3NB.

● **AMIGA** educational software, Funschools £8. Lets Spell £8. Designa Saurus £10. BBC Emulator £10. Robot Reader £6. Deluxe Paint 2 £10. Phone 081 647 7323.

● **2MB AMIGA**, 3 drives, Star LC10 printer (new) over 250 PD disks, catalogue magazines etc. Monkey Island, P.T.T. 2, .EO.T.B. worth over £1200. Contact Colin Mitchell, 31 Sloan Street, Catrine, Scotland, KA5 6PR.

● **AMIGA 500** plenty of good software, magazines and a joystick. £250. Phone 0290 51902, ask for Troy.

● **AMIGA** magazines. Amiga Computing 1-37, £2.50 each, The One 1-7, £1, Zero 1-20, £1, Your Amiga 1-May 91, £1, Rampage 1-4, £5 each. Ace 1-27, £1. Amiga Format 13-23, £2. All mint condition. 0224 824904.

● **AMIGA A500** three meg RAM A590 20Mb hard drive second drive, control centre plinth, High-Res mono monitor, mouse, joystick, leads, manuals, lots of software. £775 o.n.o. or P/X for A1500 or B2000. Tel 0455 843545.

● **CBM** Amiga A500 with half meg upgrade and over £1200 worth of games, PD, magazines, package worth £1600. Sell for £500. Also gameboy for sale inc two games, Tetris, Golf, sell £55. Tel 021 447 7005.

● **AMIGA 500** with software, 12 months guarantee plus Public Domain disks and magazines, joystick all for £275. Call Linden on 081 961 3758. Software includes, C-Light, 3D Graphics, all original.

● **AMIGA 5.25"** external disk drive, £75 o.n.o. Master Sound sampler, £20. Tel Dave 0799 41478 evenings.

● **AMIGA A500**, joystick, games, blank disks, etc, four months old, boxed and in excellent condition. Extended warranty till 7/3/94 worth £500+ sell for £350. Phone 081 691 7456 after 6pm and ask for Kimwen please.

PC

● **ADLIB** music card for PC compatibles, mint condition, only 2 months old. Boxed complete with software, and manual, bargain at £70. Tel Martin on 0908 221092.

● **WANTED** Amstrad 1512 manual. The one that you get when you buy it. Sensible price. Please phone between 3-7pm anyway. Ask for Ian or Monday-Tuesday evenings. Thanks.

● **AMSTRAD PC2086** VGA mono 32Mb Winchester hard card, twin 31/2" and 51/4" external floppies. £550. Phone Chris after 6pm. 0588 638750.

● **WANTED** Desktop package (Publishing) for PC. 31/2 or 51/4 disk, Timeworks would do! As I have a limited budget. Please phone on 071 790 7499 (10-6pm).

● **WANTED** BBC Master or BBC model B Computer for school child. Good price paid. Any condition considered, will collect. Telephone 0332 830140.

● **FOR SALE:** Olivetti PCS286 20Mb mono VGA, excellent condition, £700 o.n.o. Philips Pro 3 CM9809 colour VGA monitor, only 6 months old, £230 o.n.o. Phone Andy 081 3979613 home or 081 3913367 work.

● **GAMES** for the Speccy from 50p each. Also you are entered into a free prize draw. Write to 4 Albert Road, Grappenhall, Warrington, Cheshire, WA4 2PG. For a price list.

● **PPCMBC:** The PC Fanzine that caters for all your needs. The first issue ordered is free, so send contributions and orders to: Offshoot Publications, 8 St John Street, Coleford, Glos, GL16 8AR.

● **IRISH READERS!** PC software for sale. Clarion 4GL professional developers edition v2.1 including report writer. MS-COBOL v3, Lemmings, MS-DOS v5.0, plus many PC books etc. Tel (0404) 67724 after 6.30pm and ask for Alan.

● **AMSTRAD 1640SD** excellent condition, mono display, instruction manual MS-DOS ver 3.2 GEM ver 2.0 Locomotives softwares Basic 2, mouse, £200. o.n.o. Tel (0942) 228413.

● **AMSTRAD 1640**, two 32Mb hard cards, 31/2" and 51/4" drives, colour display, Naksha mouse, manuals and bundles software, all boxed, £550 with two hard cards, £500 with one. Ring Ken. 071 5827421.

● **AMSTRAD 1512DDCH**, boxed and in excellent condition. 32M hard card and much software inc. Wordstar and much software inc Wordstar, DBase II+ Fleet Street, PC Tools, Supercalc, Norton and much more. £500 o.n.o. Tel 0475 45462.

● **IBM PS2 70MB1** 8513 VGA monitor 6Mb RAM 60Mb HD. Phone 081 310 7162 evening. £2200.

● **PC SHAREWARE** 12Mb of compressed programs, games, accounts, word processing, spread sheets etc. indexed and checked 6Mb £15 or all 12Mb £25. (5.25" or 3.5" disks) please state. Cheque/P.O. to G Wight, 7 Valehead, Whitley Bay, Tyne and Wear. NE25 9AY.

● **286/12 1M RAM 3.5"FD S.P.G.**, colour VGA monitor, 40Mb hard disk. £500. Call Deborah on 0273 728930.

● **FOURTEEN** megabytes compresses, PC compatible shareware, utilities, games, accounts, business, graphics, word processing, etc, only £16. Send cheque /P.O. to: Andy Kyriacou, 17 Parkhurst Road, London, N22 4JQ. Tel 081 881 1696. (Please specify disk size).

● **COMM64**, tape drive, Comm monitor 1701, Comm disk drive 1541 over £200. Books, disks, includes utilities, games, plus mouse and joystick, Mini Office II, Paint Program and Pools £250 or near offer. Bracknell 0344 422307.

● **FOR SALE:** C64 plus 185 games, worth £200. Ideal for beginner. Demonstration available. Very good condition. £230 o.n.o. Tel: 071 254 9330. Ask for Jason.

● **WANTED** Atari user magazines, manuals, why. Reasonable prices paid. Write to D. Copeland, 31 St Marks Road, Weatley, Doncaster, DN1 2NR.

● **AMSTRAD CPC6128**, monitor, ROMS including Protekt. Various PD, 19 blank disks, games, leads, advanced art studio, around 50 magazines, only £290. Phone (0245) 320203. Also midi drum machine with memory and 100 drum patterns. Only £50.

● **SAM COUPE** 256K with internal disk drive, technical manual, assembler. ROM upgrade and external disk drive/printer interface, includes all leads, Spectrum Emulator software and some Spectrum games. £120. Tel (0609) 778613 (North Yorks).

● **AMSTRAD CPC6128** computer with colour monitor, Panasonic KXP1081 printer, second disk drive, WP, DTP art games, utility software, plus lots more unable to mention. Worth over £1300. Sell £800 o.n.o. Phone Jonathan Hawkins. (0296) 622105 evenings.

● **C64C COMPUTER** C2N cassette unit, joystick with many games, plus few magazines. £95 o.v.n.o. Phone Dave (0332) 559533.

● **AMSTRAD CPC6128**, colour monitor, disk drive, plus data tape recorder, joystick, manual and wide range of software. £240 o.n.o. Wynn Rees, Winchester. 0962 712004 evenings.

● **SPECTRUM +3** and Spectrum 48K, manuals, speed controller, over 30 games, tapes and disks, 12" colour TV/monitor. £180 the lot o.n.o. Phone Oxford. 553430.

● **ARTIST II** for the Spectrum +2, yours for a fiver. Printer cable for a Spectrum +3/+2A, only £5. Phone Peter on 031 441 7952.

MIKE JERVIS

16 bit Computers

19 Portree Drive, Rise Park, Nottingham.

NG5 5DT. Telephone (0602) 274369

SERIOUS AMIGA SOFTWARE AT FRIVOLOUS PRICES

All prices include VAT and Postage Callers Welcome

Bars & Pipes Professional complete with Tool Kits A&B, Multi Media Kit and Internal Sound Kit **£300.00**

Pen Pal**£65.00**

Wordworth**£80.00**

Video Titler 3D....**£89.50**

Pro Video Plus...**£153.50**

Amigavision.....**£76.50**

K-Roget.....**£20.00**

Deluxe Paint 3**£53.50**

Small Business Accounts Cash **£53.50**

Sterling Service Bulletin Board **£73.50**

Quarterback **£32**

Distant Suns **£45**

Vista **£51.50**

GPTerm **£50**

Art Department Professional **£115**

Small Business Accounts Extra **£76.50**

K-Comm2 **£20**

A.M.A.S **£64**

Prodata **£49**

Quarterback Tools **£44.75**

Protext 5 **£90**

DOS to DOS **£24.50**

The above is only a small selection from our extensive stocks of hardware software and peripherals.

● **AMSTRAD ALT 386** portable, 2 meg, 40 HD (full) VGA, 1.44 floppy, mint and boxed. MS-DOS 5, £11. GEM 3.02 original disks, £10. Epson Monochrome Graphics Card, £10. Tel Woking (0483) 764857.

● **PC OWNERS** everywhere - help! I'm desperate for contributors, column writers for my PC Fanzine and will accept absolutely anything. All letters get latest issue free. Write: Offshoot Publications, 8 St John Street, Coleford, Gloucestershire, GL16 8AR.

IBM XT, 10Mb, 640K, clock, etc. Green monitor K/B, £200. Also huge quantity of computer parts. Mostly IBM (inc PS/2). Modems (Dowty, Racal, Dacom), far too much to list. Call Chris on (0424) 718957 evenings/weekends.

FOR SALE CPC6128 with joystick, multiface 2, colour monitor, manual, books, magazines, tape lead, disk box, business package, datacarder, £350+ worth of games. Worth £800 + only £350. Buyer collects. Ring 051 625 8994 between 10am and 7pm.

Let this advertising space work for YOU!!

For only £61

Contact Charlie Nicholls

on

0225 442244

● **AMSTRAD PCW 8256** computer, vert good condition, complete with new desk, Locoscript, Mini Office etc software, and printer. £195. Southampton 442354/677144.

● **AMSTRAD 2086**, 30 meg hard drive 31/2 floppy VGA mono monitor, 3350 o.n.o. Phone Gordon 0256 780608.

● **FOURTEEN** megabytes, superb PC shareware covering spreadsheet, programming, word processing, graphics, Dataliners, games etc £16. Cheque/P.O. to Andy Kyriacou, 17 Parkhurst Road, London, N22 4JQ. (State disk size) or send SAE marked 'megadisk' for program list.

● **PORTFOLIO** by Atari with parallel and serial interfaces for sale, only £150, with mains adaptor! Wanted, used HP Deskjet ink carts. Tel: 081 3631578. Ask for Jeremy. Atari Simms £25 o.n.o.

● **GENUINE IBM PC**, 128K twin 51/4" disk drives, green screen, High-Res monitor, ideal beginners computer, £150. Tel 0422 378662 (West Yorkshire).

● **PC SOFTWARE**, Sim City, Populous, Elite, Battle Chess, Infocom Adventurers, Boulderdash, Skweek, Millenium 2.2, Mini Office Personal. £5 to £10 each. £60 the lot. Call 0732 885028 evenings.

● **PC MAKE** me an offer for one of my PC's Commodore PC40 286 VGA colour 40Mb drive tape streamer and PC20 VGA 20Mb drive, both still under warranty (with extra original software). Call me 0527 541526.

● **COMPAQ** portable 286, 640K RAM, 20 meg hard disk, two 5.25inch disk drives, one parallel and one serial ports, MSDOS 4.01, lots of software. £550. Phone 0689 84356. Croydon.

● **VIGLEN** Genie 386SX, 40Mb HD, 31/2 inch floppy, SVGA monitor + adaptor, Epson LQ550 printer, Turbo Pascal 5.5 + manuals + books, guaranteed, on-site maintenance, boxed, will sell separately, whole lot £1100. Phone 081 942 1795.

● **AMSTRAD 1640PC** CGA, twin drives, with Epson LX80 printer, cables + Datel midi sound card with music studio software + joystick card light pen and lots of software all for £650. Phone Fanos. 081 802 4652.

8-BIT

● **AMSTRAD** portable PPC 640DD, instructions, transformer, canvas carrier. £250. 071 8378008.

● **FOR SALE.** ZX Microdrive and M Speech. Offers or will swap for Amiga hardware/software. Tel 051 924 6328.

● **FOR SALE**, Commodore 64 computer, datasette, taped originals, all leads and manuals £80 +p.p. Plus Citizen 120D printer, ribbon, paper, leads, and manuals, only £80 +p.p. Phone now on 051 334 1488, ask for Paul. Hurry!

● **AMSTRAD 464** and colour monitor, lots of software, 2 joysticks, modulator and manuals. £125 o.n.o. Write to Rob, 4 James Street, Trowbridge, Wilts, BA14 8NJ.

● **SPECTRUM** and BBC public domain and shareware software. Send 20p and stamp for a list to: Robert Frostick, 1 Northolme Close, Grays, Essex, RM16 2NX.

● **C64 CPC** soft, hardware for sale. SAE to: Arthur Brympton Cottage, Brunswick Road, Worthing, Sussex, BN11 3NQ.

● **SPECTRUM +3** disk drive, tape recorder, leads, manuals, Multiface 3 £400. worth £600. Bargain £240 o.n.o. Phone 0327 60351.

● **BBC Master 128** + med-res colour monitor + single 40/80 internal disk drive + Quest Paint + mouse + Stop Press + 64 fonts + some games + many utilities + blank disks + manuals + micro user magazines + monthly disks + more. Phone Kirkcaldy, (0592) 205968 after 5pm.

● **BBC MASTER** 128K computer, plus Cumana 40/80 track DSDD drive plus Microvitec colour monitor. ROMS's, AMX mouse, other software, little used, £400 o.n.o. Buyer must collect. Islington. Phone 071 226 2011 after 7.30 (evenings).

● **CPC6128**, colour monitor, two drives, printer, Light Pen, Multiface two, joysticks, data recorder, ROMboard, nine ROM's. Manygames. Sell for £800. Mint condition. Phone Asad (061) 6522556 between 6 and 7pm.

● **WANTED** good chess program for 48k Spectrum. Tel 0432 58127.

R.J. COMPUTERS

SPECIAL OFFERS!

Two Boards (stereo sound for the Atari STFM) Drivemaster (switch between 2 external drives) **£12.50 each**

Atari 1040 STE Family Curriculum Pack **£375.00** 520STE Discovery Extra Pack **£317.00** Star LC10 **£168.00**

Star LC200 **£235.00** (inc cables) Amiga 1 Meg Classic Pack **£389.00**

We stock many items at competitive prices. Postage £5 large or £1 small items.

30 Westbourne Road, Downend, Bristol. Telephone 0272 566369

● **AMSTRAD 6128**, colour monitor, tape recorder, disk and tape software, multiface, joystick, dust covers original boxes, manuals books, magazines. All very good condition. 3220. Can deliver within reasonable distance. Tel 081 697 0556 anytime.

● **C64**, disk drive, printer, tape deck, joystick and mouse, two word programmers, two graphics and spreadsheet plus more, about 80 games for £295. Phone Nick on 0460 73588.

● **SPECTRUM 128K** +2 with two joysticks and approximately twenty games, all in original boxes and little used. £100. postage paid in UK. Tel Witham, (0376) 511551 after 6pm.

● **FOR SALE** BBC computer, good condition, with sound switcher, 128K sideways RAM plus toolkit software in ROM, some software, includes 40/80 track disk drives and manuals. This for £150 cash, some one local please. Buyer collects. Tel (0243) 789425.

X-Press PD CLUB

All latest Amiga titles available - £1.00 per disk, postage and packaging free.

FREE membership with 1st purchase. Regular competitions held, including our very own Kick Off League.

Below is a small selection of titles available from our large stock.

Discounts for orders over £20.00

Chubby Brown (1 Disk) - Comedy
Definite Docklands (1 Disk) - A must for 'Jarre' fans
Groove Is In The Heart (1 Disk) - Music Sample
Holy Smoke (1 Disk) - Loads of Utilities
Kylie Minogue (2 Disks) - Excellent samples and Slide Demos
Madonna (4 Disks) - Vogue Sampler
Not the 9 O'Clock News (2 Disks) - Gorilla Sketch
Samantha Fox 2 (1 Disk) - Slideshow (18+) **Star Trek Trivia Quiz** (1 Disk) - Game

We also supply sound tracker samples, T-Bag disks and our own disks and demos. Send S.A.E. for catalogue or blank disk for disk magazine.

Please send to:- **K.Larkin, X-Press PD, 12 Hathaway Court, Cheriton Road, Gillingham, Kent, ME8 0ES. Tel: 0634 30638**

● **SPECTRUM** software for sale on tape. Lots of titles to choose from. Prices from as little as 75p. So send SAE to 17 Thurnham Grove, Marton, Middlesbrough, Cleveland TS7 8PT, and hurry!

● **SPECTRUM 48K+** includes tape deck, interface, joystick, loads of games, (all originals), leads manuals etc. Word processor included. Forced sale. £80 o.n.o. Ring (0904) 797213 after 6pm and ask for David.

● **BBC B**, issue 7, with two Tier Plinth, Opus double sided 40/80 track disk drive, Atari type joystick with BBC B interface, many disk games with disk box, all in excellent condition. £225 the lot. Phone (0843) 31306, evenings.

● **AMSTRAD CPC6128** green screen, TV modulator, AMX mouse, Serial Port, Stop Press, Art Studio, XPress, Tasword, Tasspell, Elite, CPM plus lots more, good condition. All manuals. Tel 021 430 2220 evenings. (Birmingham). All for £280.

● **WANTED** a copy of user manual for Epson PX8 computer. Peter Deane, 18 Tivoli Crescent, Brighton, East Sussex, BN1 5ND.

● **LANGUAGE** courses for Atari 8-BIT computer range. Five audio tapes and manual per course. Tape has digital track. Int condition. French, Spanish, German, only £12 per course. Tel 0452 300129.

● **ORIC 1** 48K colour computer software, book, leads, £30. Amos printer for above plus paper. £30 or both. £50. Buyer collects. Maidenhead. 0628 23656.

● **1541 II** Commodore disk drive for C64, £90. Still under warranty, printer, £35 with three ribbons, the C64 itself is £60. Also Oceanic C64 compatible disk drive, needs attention. G. Proctor, 12 Jubilee Drive, Thornbury, Avon, BS12 2YG.

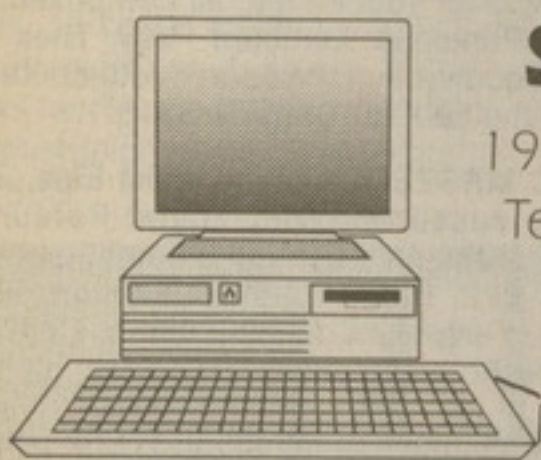
● **WANTED** BBC B user guide/manual mines gone missing, cash awaits or swap, telephone 0532 869425, ask for Michael weekends. For sale Wordup Gunship, Star Glider etc for Atari ST, make an offer, even swap for blank disks, original copies only.

● **SPECTRUM +3** Light Gun, joystick, £600 worth of software, magazines, datacarder, manuals etc. £250 o.n.o. Also Yamaha PSS140 keyboard, stand and PSU. £80 o.n.o. Tel Leeds. (0532) 642908 anytime.

COMPUTERS

For probably the best prices and deals on Home and Business Computers, Acorn, Archimedes, Atari ST's, Lynx, Commodore 64's, Amiga's, Amstrad, Star, Citizen, Canon, Panasonic, Sega, Nintendo Consoles. Plus printers, disk drives, monitors, memory upgrades and accessories etc. Great deals on PC's.

* FAX M/C's * ANSWER M/C's * PHONES *
 Joysticks from £4.99 Blank disks 5.25", 3.5" 3"



SGM ELECTRONICS

19 Charles Street, Wigan, Lancs, WN1 2BP

Tel: (0942) 321435 Fax: (0942) 821273

Mon-Thurs 11.00am - 9.00pm

Fri - Sat 11.00am - 7.00pm or later

Repairs to most makes of computers

● **C64** disk drive, datasette, joysticks, expert cartridge and over eighty games. Everything boxed. £220 o.n.o. Ring Richard. (0742) 557841 (Sheffield).

● **SPECTRUM +2** with MGT + D disk drive and printer interface, plus 1 meg disk drive takes 31/2" disks. Snapshot button to transfer seconds, plus lots of software. £150. Phone 081 560 6162 evenings.

● **SPECTRUM +3** owners! User friendly disk menu system for sale. Send cheque, cash or P.O. for £5 to: Andrew Wade, 20 Fremantle House, Dove Street, Kingsdown, Bristol, BS2 8LG. Also enclose an SAE please.

● **BBC 51/4"** disk drives: single, full height 40T-DS and dual half height, both un-cased, hence £20/£40 o.n.o. (Cases cost £12 new). Phone 0925 756816 after 6pm.

● **COMMODORE 64**, disk drive, data cassette, 2 joysticks, reset switch, many magazines and extras. Over £1000 worth of cassettes and disks. Excellent condition, bargain at £240 o.n.o. Telephone (0903) 715504 for further details.

● **SAM COUPE** computer, 100's of games, joystick, books. As new, still boxed. £80. Tel (0202) 874833 after 6pm. Ask for Roger.

● **THE ACORN** Elecron user group, for details, send an SAE to E.U.G. 134 Great Knightleys, Basildon, Essex, SS15 5HQ.

● **C64** genuine Commodore modem simply plugs into port-on screen instructions. Also a few disk games, boxed, Ultimate, Star Fleet, Bards Tale III, Phantasia II. Offers, no reasonable cash refused! Phone Frank 0245 323079 evenings.

● **SPECTRUM 48/128K** music machine for sale. £30. Spectrum 128K/+2/+3 music writer. £17 or sell both for £42. Telephone Barry on 0362 694976 after 6pm.

● **COMMODORE 64** with joystick, cassette, games, etc. Only £50 o.n.o. Tel 021 373 9178.

● **64k RAM** expansion for CPC good condition, £30. Also Stop Press and mouse, very good condition. £45 and Kick Off 2 + Sim City on disk for CPC £9 each. Contact Simon on 0543 424813.

● **48K ZX SPECTRUM** with manuals, tape recorder, 2 joystick interfaces, currah speech and sound unit and about 200 games, including Silk Worm and Robo Cop. All for £45. Phone Tim on 081 464 2104.

● **FUN SCHOOL 2** on disk for Spectrum +3. £3.50 +post. (03985) 438.

● **ISSUE** four of the Re-Run Fanzine is finished. It covers the Spectrum, BBC, CPC, C64, ZX 81 and 8-BIT Atari. A bargain at only 50p including p+p to: Re-Run, 1 Northholme Close, Grays, Essex, RM16 2NX.

● **CPC SOFT/HARDWARE** for sale. SAE Arthur, Bympton Cottage, Brunswick Road, Worthing, Sussex, BN11 3NQ.

● **COMMODORE 128** complete with leads, power pack, data cassette, lots of games, joysticks, and b/w TV. £65. Phone 081 948 3300.

● **BBC model B** issue 7, DDFS 1.54T, solidisk, two meg, 256K, sideaid 256 40/80T disk drive, joystick, mouse, data recorder, plus loads of software and manuals. £450 the lot. Tel 041 776 4069.

● **AMSTRAD CPC464**, colour monitor and green screen monitor, disk drive, Multiface 2 printer, cable, dust covers, 40 disks, £450. Tape software, manuals, books, magazines, sell for £320 o.n.o. Tel (0723) 863412.

● **COMMODORE 64** computer and datacassette, both boxed, competition pro 5000 joystick, well over 100 games including KO2, Ninja Spirits and many more. 90 computer magazines (C +VG, Zzap, Commodore Format etc). All only £140 o.n.o. Phone Paul 0625 526275.

● **SUPER** Famicom (Scart) with Final Flight and Super Mario World, excellent condition, £220. Tel 051 605 0410. Colin

● **THE ULTIMATE** games machine. Neo Geo (Scart) + Majician Lord + PSU. £340 o.n.o. Ring Kev on 0484 720353. Colin.

● **WANTED** megadrive to swap for Gameboy with link-up cable, earphones, Tetris, Contra, Double Dragon, Mario, everything boxed, 6 months old. Cash adjustment made. Phone now 041 339 1646 between 10am - 5pm weekdays. 041 427 2092 after 6pm anyday.

● **SWAP** my Sega game gear for your megadrive, game gear comes with two top games. Tel: (0269) 845826. Ask for Nial.

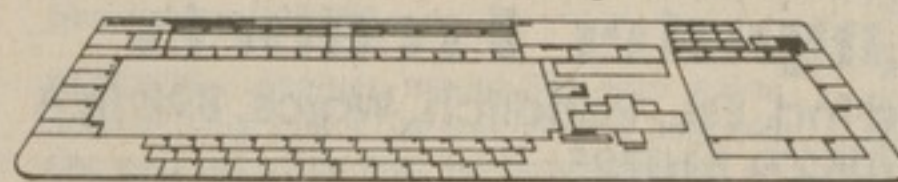
● **ATARI** Lynx with mains adaptor + 4 games, Chips Challenge, Gauntlet III, Electrocop, Gates Of Zendocon, worth £220. £120 or swap for game gear. Phone Seth on 021 355 3841.

● **SEGA MASTER** System with Golden Axe, and Psycho Fox, three joysticks, good condition, boxed, only £65 including postage. Call Sufyan on 021 471 1276, Birmingham.

● **SEGA** (PAL) console for sale, including five up to data games and joypad, only £75. Please call Rob after 7pm on 081 909 3025. Also have loads of IBM PC games to sell.

AMIGA/ATARI KEYBOARD OVERLAYS

...now you can write the keyboard commands on the keyboard!
 ...no more referring to the manual for which key does what



Silverbird computing

Cheques and money orders only to Silverbird, 47 Barton Road, Harlington, Bedfordshire, LU5 6LG, England.

For all Atari ST & all Amigas except A1000. Sold only in packs of five for £5.20 PLUS post and packing: UK £0.80, Europe £1.50, Rest of the World £2.50.

CONSOLES

● **PC ENGINE** Scart, boxed as new with four games., £120. Also wanted PC Engine CD-ROM games. Phone 0782 312157.

● **NEO GEO** (Scart) with Nam 1975 and Baseball and Second Controller, £450. Super Famicom (Scart) with F-Zero and Populous, £220. Seven others Famicom games at £25 each. Everything boxed, as new. Phone 0322 863656. Darren.

● **SUPER FAMICOM** with four games, Final Flight, Mario World, Pilot Wings and F-Zero. Excellent condition, only two months old. £260 o.n.o. Ring 0276 76156. Ask for Dermot.

● **SUPER Famicom**, brand new with Pilot Wings, Actraiser, Final Flight, Augusta, 3D Golf, under guarantee and boxed only £270 o.n.o inc stereo sound, leads for Hi-Fi. Phone Andy 0564 772476. Can deliver.

● **SEGA** Megadrive, with five games and two controllers, £80. Price is so low because I need quick sale. Please call Rob on 081 909 3025 after 7pm.

● **WANTED** Sega and megadrive games, English, Jap or USA, any titles taken if cheap, write Alex Craven, 11 Elizabeth Place, Sompot, West Sussex, BN15 9UJ or phone 0903 767030 after 7pm.

● **ATARI** Lynx (boxed) under warranty with three games, Blue Lightning, California Games, Klax, plus headphones. Also rechargeable batteries and recharger, total value over £220. Bargain at only £135 o.n.o. Phone Peter on (0733) 233314.

PRINTERS

● **FOR SALE:** C.I.TOH C310 Dot Matrix printer, LQ, Serial good condition, works on PS's, Amigas etc. Cost £450 new, asking £130 o.n.o. Surplus to requirements, hence sale. Tel Terry on 071 790 7499.

● **WANTED** user manual for Juki 1600 Daisey Wheel printer to buy or loan for copying. Tel: 071 790 7499 and ask for Terry.

● **OLIVETTI** Super colour VGA monitor, £120. Star LC-10 colour printer £115, both in mint condition, serious callers only. Buyers collect or pay postage. Tel Lee. Crewe (0270) 582501 after 5pm.

● **CITIZEN** 120D+ printer with dust cover and lead for Amstrad CPC/CPC+, Amiga, Atari, ST, etc. Good condition, 18 months old. Bargain at only £40. Tel 0772 39146 after 7 o'clock. (Preston area).

● **CANON** PCW1156A NLQ (156 column) 9PIN DMP with manual and ribbons, sell or exchange for 24PIN colour printer for use with Amiga. Phone (04023) 81033 (Essex).

● **CITIZEN** 120D 9PIN printer, mint condition, £100. Tokai Falme Maple Les Paul, a real beauty. £299. No offers, includes original Deluxe case, will consider part exchange. 0623 861158.

● **IBM 4216/020** Postscript Laser w/ps-2 controller £750 o.n.o. Brother HL-8E. Laser, excellent condition, boxed with manual. £650 o.n.o. Tel (0727) 837793 (St Albans).

● **STAR LC-10** colour printer Commodore 64/128 ready, can be used with Geos using the JX-80 printer driver! Phone Steve on 0293 532571 (Crawley, West Sussex). Evenings, £130 o.n.o.

ARCOM COMPUTER SERVICES

IBM PC - NINTENDO - SEGA - ATARI - AMIGA
 GAMES AVAILABLE FOR ALL MACHINES
 IN ALL FORMATS AT GOOD PRICES

JOYSTICKS DISKS SOUND CARDS

FOR MORE DETAILS: ARCOM COMPUTER SERVICES

Alice House, 10 High Street, Ashwell, Herts. SG7 5NL

OR CALL 046274 2024

PRICES INCLUDE DELIVERY & VAT

● **WANTED** Gameboy in good condition, will pay £30. Write to Gary Milne, 2 Ardeer Place, Fraserburgh, Aberdeen, Scotland, AB43 5SW.

● **WANTED** cheap, Gameboy and Neo Geo carts. All in good condition, but very cheap. Neo Geo memory card wanted, £5 paid. Neo Geo joystick wanted, £20 paid. Phone (Steve) (0628) 72275. Maidenhead after 6pm. Weekdays anytime weekends. No lammers.

● **IMPORTED** megadrive (PAL version. Scart lead, also included) with Monaco GP and Mickey Mouse. Runs all cartridges. 7 months old. Excellent condition, only £110 plus p+p (£5). Phone Mark on (0395) 515569 after 6.30pm.

● **ATARI** IMb STE, stereo colour monitor, replay eight with leads and microphone 10PPM Laser printer, no games, unless you really want them badly. (Ex fanzine publisher wants Mac). Quick sale please. £1700. Answerphone: Guy (Brighton) 679318.

● **PRINTER** Tandy DMP106 9PIN printer, good condition, supports IBM codes has tractor feed. £80. Call 0900 601677 after 7pm.

● **URGENT** student requires Amiga-Citizen 120D parallel on Serial Interface and lead. Will swap my C64 Interface and lead and/or cash. Phone Nick on 091 523 6386.

● **CITIZEN** Swift 24PIN standard black ribbon and colour kit, manual cut sheet feeder, 6 months old. Centronics parallel lead. £150. Wayne (0703) 243358 after 6pm. Weekdays only. (Southampton).

● **PANASONIC** KXP-1081 printer. Excellent condition. £90. Phone 081 886 6114, mornings 081 889 8426 evenings.

● **STAR XB-24-10** Professional 24PIN Dot Matrix printer with colour kit, 2 black ribbons, 2 colour ribbons and lead, suitable for Amiga/PC/ST. Still under warranty. £320 o.n.o. Phone David (0942) 270417 (Warrington).

◆ SOFTWARE

● **PC SHAREWARE** £1 disk +p+p over 200Mb largest and best latest Top Anglo American titles. Best value. Send 2 first class stamps for easy menu driven catalogue disk. 37 Devon Place, Newport, Gwent, NP9 4NW. 0633 259847.

● **AMIGA** owner will swap Beast II, plus Solution or Night Breed for Back To The Future One or Three, Total Recall or Man United game, other titles considered. Phone Nicky on (0382) 535517.

● **AMX** and Pacemaker 3 ROMS and sixteen disks (9 graphic disks) for quick sale, £60 for BBC mouse included. Mr. A. Bell, Sutton Way, South Shields, Tyne And Wear, NE34 7QG. 091 4544681.

● **AMIGA** demos to swap absolutely free, just send a disk, demos or list and I'll reply with some disks, over 300 demos to swap. Send to Stuart Sankey, 67 Mapledene Road, Sheldon, Birmingham B26 3XE.

● **PC SHAREWARE** £1 disk +p+p over 200Mb largest and best Top Anglo American titles. Best value. Send 2 first class stamps for easy menu driven catalogue disk. 37 Devon Place, Newport, Gwent, NP9 4NW. 0633 259847.

● **SHAREWARE** for Windows, hundreds of titles games, screen utilities, disk, file, memory utilities, icon editors etc. £1 disks +p+p. Send SAE for list. 37 Devon Place, Newport, Gwent, NP9 4NW. 0633 259847.

● **AMIGA** Player Manager (Anco) for sale, only £8 Tel 0260 276574 after 7pm. Ask for Robert.

● **3D GAMES** (shareware/PD) for PC inc Chess, Backgammon, Volleyball, Pinball, Invaders, Connect 4, etc. £11 Send cheque/P.O. (specify disk size) or SAE for list to: Andy Kyriacou, 17 Parkhurst Road, London, N22 4JQ. 081 881 1696.

● **PC SHAREWARE** library quality menu driven shareware over 1,000 titles send SAE for catalogue on disk stating disk size. G. I. Wight, 7 Valehead, Whitley Bay, Tyne And Wear, NE25 9AY or telephone (091) 251 1177.

● **PC HACKERS** pack 100's of unprotects virus kit assembler/disassembler copier disk tools etc only £15 for 11 full 5 1/4" disks plus £1 p+p. 37 Devon Place, Newport, Gwent, NP9 4NW. Tel 0633 259847. Not for piracy.

● **PC SHAREWARE** £1 disk +p+p over 2000Mb largest and best latest top Anglo American titles. Best value, send 2 first class stamps for easy menu driven catalogue disk. 37 Devon Place, Newport, Gwent, NP9 4NW. 0633 259847.

● **DEMOS** programmed to your requirements, top quality graphics, including scrolling messages, specify you chosen subject eg. Film, band football team. £4. C64 tape only. Cheques/P.O.'s payable to S. McMenamin, 18 Victoria Crescent, Clarkston, Glasgow. Alternative: cash.

DISKS

FUJI Bulk

3.5" DSDD

50 = 35p
100 = 32p
250 = 31p
500 = 30p

5.25" DSDD

50 = 24p
100 = 22p
250 = 21p
500 = 20p

from
only

20p

+p+p

Compiler Computer Products

88 Heming Road, Washford Ind. Est., Redditch, Worcs, B98 0EA
Tel: (0527) 510725

◆ MONITORS

● **MULTISYNC** monitor by A.O.C., 1024 x 768 resolution now interlaced, 6 months old with leads, suit IBM compatible, Amiga, Archimedes, etc. £150. Wayne (0703) 243358 after 6pm. Weekdays only. (Southampton).

◆ MODEMS

● **WANTED** HST or dual standard modem, must be reasonably cheap or ring to negotiate. Swap for Amiga kit. Ring Mike on 0889 574070. Also 4 x 1M x 9 Simms 80NS (STE/PC). £30 per meg or £100 the lot.

● **Linnet v21, v23** intelligent modem, Hayes fully automatic, 32 number memory, still under guarantee, also ST software if required. RRP £180. Sell for £100. John Sheppard, 112 Carlington TCE, Heaton, Newcastle Upon Tyne NE6 5SJ.

● **PC AND ST** games for sale, low prices, send SAE for list to Raymond U, 52 Farndon Way, Oxtou, Birkenhead, Wirral, L43 2NP. All games are originals. Also wanted ST penpals in to RPG's. If not write anyway.

● **AMIGA** boxed originals games sale/swap. Also 3D kit, Amos, Digita Acc, Wrath Demon, Strider 2, Dragons Breath, Speed 2, TMNT ICFTD, Orbitus, over 200! For lists large SAE, 13 Bournville lane, Birmingham, B30 2JY. Tel (021) 459 7576.

● **JAY-DEE'S** PD, Amiga PD only 40p each. For catalogue disk and SAE to Jay-Dee, 389 Scalby Road, Newby, Scarborough, N. Yorkshire, YO12 6TG. Catalogue update monthly PD also were new so we are very willing to swap.

● **AMIGA** games for sale. Lords Of Chaos, £15. Days Of Thunder, £10. Back To The Future, £10. Deluxe Paint two, £15. Contact Stephen Leonard, 56 Eldon Street, Glasgow G3 6NJ.

● **PC HACKERS** pack 100's of unprotects virus kit assembler/disassembler copier disk tools etc, only £15 for 10 full 5 1/4" disks plus £1 p+p. 37 Devon Place, Newport, Gwent, NP9 4NW. Tel 0633 259847. Not for Piracy.

Mail-IT DISCOUNT PC SOFTWARE

Our ever expanding database now includes over 600 publications of UK sourced PC software all at ridiculous prices

To order your regular update of our price list or to receive an instant quotation call Wendy on our credit card hotline



(0323) 440-555



● **FANTASTIC** Atari ST public domain games. 1-5, £1.50, 6-9, £1.25, 10+, £11 For a list on a disk send £1 or blank disk with SAE to: Tahmur, 10 Grasmere Avenue, London, SW19 3DX.

● **FOR SALE** old software and magazines for C64 from £1. Old Zaph 64's CCI's and you Commodores etc. Send SAE to: Jason Nock, 12 High Haden Crescent, Cradley Heath, West Midlands, B64 7PD. For full list.

● **SHAREWARE** for Windows, hundreds of titles. Games, screen utilities, disk, file, memory utilities, icon editors, etc. £1 disk +p+p. Send SAE for list: 37 Devon Place, Newport, Gwent, NP9 4NW. Tel 0633 259847.

● **AMIGA** Telepad telephone pad program, quick loading, easy to use and includes 35 page spiral bound manual, only £4.95 including p+p. Send cheques payable to P. Budd, 12 Taylor Court, Worle, Weston Super Mare, Avon BS22 0LU.

● **THE ULTIMATE** PD exchange service, just send a disk with a demo list on and will send you ours absolutely free, swaps PD only. Send to Stuart Sankey, 67 Mapledene Road, Sheldon, Birmingham, B26 3XE.

● **LOADS** of Commodore 64 games for sale! Last Ninja, Speed Ball, Skate Crazy, Rick Dangerous plus lots more. Send SAE for list to: Robert Frodick, C64 list, 1 Northolme Close, Grays, Essex, RM16 2NX. Telephone 0375 378004.

● **BATTLE** Scape, original wargaming program for Atari ST/E. Select units, use different terrain maps, 2 player game. £4 or SAE for details. R. Wright, 32 Valley Crescent, Wokingham, Berkshire, RG11 1NP.

● **AMIGA** games. All originals, boxes + instructions. All £4 each. Mike Read Pop Quiz, Voyager, Backlash, Batman The Caped Crusader, Archipelagos, EXNON, Championship Golf, Xenomorph, Blasteroids, STR YX, Commando, Sonic Boom, Skruell. Phone 0777 848953.

● **AMIGA** games, all originals, box's + instructions. All £11 each. Rainbow Islands, Gunship, Total Eclipse, Golden Axe. Phone 0777 848953.

● **AMIGA PD** only £1.25 per disk, send £1 for disk catalogue or SAE for printed list. Send to 9 Broadfield Square, Enfield, Middlesex, EN1 3PA.

● **BATTLEScape** an original 2-Player wargaming program for colour Atari ST/STE different Terrain maps, select army units, includes map maker program. £4 or SAE details, only from R. Wight, 32 Valley Crescent, Wokingham, Berkshire, RG11 1NP.

● **AMSOFT** CF2 3" disks, new £15. for 10. Phone 0489 578634.

● **CONNECT** the ultimate pools system. IBM compatible, yearly registration, £11.50. Accepted by all pools companies. You'll wonder how you manages without it. Free copydisk, send 22p stamp stakes from £1.09. £50.68. B. F. Hallman, 306 Dallow Road, Luton, Beds, LU1 1TD.

● **ST ORIGINALS** for sale. Chaos, Indiana Jones, Graphic Adventure, Switchblade, Blood Money, Super Hang-on, Forgotten Worlds, Premier Collection Vol 1. £5 each, others ST Format 18-24 with disks. £10 the lot. Tel 061 788 8386.

● **SHAREWARE** for Windows, hundreds of titles, games, screen utilities, disk, file, memory utilities, icon editors etc. £1 disk +p+p. Send SAE for list. 37 Devon Place, Newport, Gwent, NP9 4NW. Tel 0633 259847.

● **TIMEWORKS LITE** DTP program for IBM on 31/2" disks, only £25. Delta 5 demo but usable database transactional, IBM compatible, 31/2" disks. £15. Phone Mike on 021 77 8808.

● **FOR SALE** Amos, Shoot Em Up Construction Kit, plus all copy system for Amiga copies anything. Offers. Ring 0789 763010.

● **C16/+4 SOFTWARE** for sale: All originals and very cheap! Send SAE to Andy Tang, 155 Packington Square, Islington, London, N1 7UB for list.

● **WANTED** MSX2 software on disk or cartridge, any amount considered, also names and addresses of overseas suppliers. Please do not send any monochrome games if possible. MSX1 cassette games also needed, especially educational. V. Woods, 46 Field Close, Alconbury, Cambridgeshire.

● **FOR** the serious Amiga user, Fine Print £14. The Works! Platinum Edition £36. DPaint III £42. All as new, boxed £75. £75 for the lot inc p+p. Call 0925 755316.

● **GAMES** for your Amiga, all new boxed, Battle Chess, Populous, Lombard Rally, Their Finest Hour, Bloodwych, TV Sports Football, Xenon 2, £55 for the lot. Call (0925) 5316.

● **BBC MASTER** software disks Elite, Zenon, Repton cassettes War, Trivial Pursuit £15. Electron cassettes over 15 different games and utilities £12. Buist, 24 West Chilton Terrace, Chilton, Ferryhill, County Durham, DL17 0HH. Tel 0388 720442 evenings.

● **AMIGA** 'telepad' telephone pad program, quick loading, easy to use and includes 35 page spiral bound manual only £4.95 including p+p. Send cheques payable to P Budd, 12 Taylor Court, Worle, Weston-Super-Mare, Avon, B522 0LU.

◆ OTHER

● **SPECTRUM** +3 128K integrated computer/disk system, new £120 o.n.o. Epson LQ1500 wide carriage, letter quality printer, sheet feeder, tractor feeder, serial interface spare ribbon. £195. 021 445 2685. (answerphone).

● **FOR SALE:** Atari portfolio with serial, parallel interfaces, PC Link lead £150. Casio DG20 digital midi guitar with 20 sounds, drum machine, strap. £120. Phone (0239) 711032.

● **SERVICE** wanted, picture digitising or scanning. Reasonable rate, as many pictures to transfer to PC or ST. Contact Nick, 57 Dean Street, Derby, DE3 3PU.

● **TO SUPPLIERS** and importers of I.C.'s. Can anyone supply one 8350 chip. I cannot find it catalogued in Great Britain. Tel 0232 642687.

● **PSION** LZ6L personal organiser with thesaurus, spell checker, 32K RAMpack datapak 64K and mains adaptor, very good condition, still boxed, cost £300. Will sell for £200 o.n.o. Tel 031 664 4650 after 6pm.

SELF ADHESIVE COMPUTER DISK LABELS

DISK LABELS - 3" & 3 1/2" Disk, 70 x 70mm, on tractor feed backing for computer overprinting. White: 500 - £18.88, 1000 - £26.19, 2000 - £31.30. Tinted labels in - Blue, Pink, Grey, Cream, Yellow, Orange, Green: 500 - £25.53, 1000 - £36.43, 2000 - £50.95.

5 1/4" Disk, 95 x 36 mm, White: 500 - £15.74, 1000 - £21.36, 2000 - £25.27. Tints as above: 500 - £20.87, 1000 - £29.25, 2000 - £40.40.

DATA LABELS - printed with horizontal ruled lines for data disc labelling of both 5 1/4", 3" and 3 1/2", these labels are coloured red, green, blue or old gold, and can be supplied in single colour or four colours along the roll, perforated between labels. 5 1/4" 1000 - £25.35, 2000 - £32.81, 5000 - £57.34

3 3/8" 1000 - £31.30, 2000 - £41.48, 5000 - £62.22

All prices are inclusive of VAT & carriage.

We are specialist computer label makers and can provide printed labels in 24 hrs. For price list and sample brochure of our full range of self adhesive micro computer labels plus details of excellent quantity discounts.

☎ Sittingbourne (0795) 428425 (24 hrs) Fax (0795) 422365

Industrial
Process

SELF ADHESIVE
LABELS
SUPERFAST

Unit 15
Church Road
Business Centre
Sittingbourne
Kent ME10 3RS
England

● **Designer** modem v21/v23, KDS Serial interface, K.D.S. Comms software on ROM, including all leads, suit Amstrad CPC, £110. Cage ROM suit K.D.S. interface, £25. Phone Clive on Nottingham 0602 725108 any evening.

● **MODEM** 2400BPS v22BIS Dataflex Quadcom PC internal modem with comms software, £70. 1.44 internal disk drive PC or Atari ST. £40. Phone Pete (0322) 662747.

● **DATel** 33 9600 baud modem, new unused, £130. Also Adaptec 9000A hard drive controller, £90. BBC magazines 250+ issues of BAU, TMU and A&B. Any reasonable offer. Call Peter (0604) 913761.

● **NEW** PD compilation disks for the Atari ST/E. Send SAE for details or £2.50 for a disk stating disk number (1.5). Cheques/P.O. to: A. Burns, 61 Coniston Road, Gunthorpe, Peterborough, PE4 6UL.

● **AMIGA PD** to swap over 300 disks, 2 meg stuff, also female swappers welcome. Write to me with list to John, Flat 45, 2 Silvermere Road, Sheldon, Birmingham, B26 3XA.

● **WANTED** Beebug C' 2-Chip set with manuals etc. Suitable for Master. Students summer project! Phone Chris on (0793) 618320 evenings.

AMIGA ST PC MEGADRIE SOFTWARE

MAIL ORDER, LOW LOW PRICES.

Credit Cards Welcome.

Phone: 0903 767030 24Hrs.

FREEWAY SOFTWARE

11 Elizabeth Place, Sompting, West Sussex BN15 9UJ

● **MINICRAFT** Mini Hobby Drill for Hobby, craft and D.I.Y. activities, 12v Transformer and accessories for drilling, grinding, cutting and engraving, only 1 month old and good working order. Boxed with instructions, only £35 o.n.o. Tel 0245 320089.

● **SWAP** Sharp IQ7200 electronic organiser (list price £150) with 50. Game card for Psion Organiser II, model L2 in good condition or sell for £120. Kent area or +p+p. Tel Nick (eves) on 0634 723659.

● **AMSOF** CF2 3" disks £15 for ten. Phone 0489 578634

● **SWAP** Sharp IQ7200 electronic organiser (list price £150) with 50. Game card for Psion Organiser II, model L2 in good condition or sell for £120. Kent area or +p+p. Tel Nick (eves) on 0634 723659.

VIRUS information wanted anything to do with virus on all computers gifts or reward for best information on viruses sent to me. Please help me to help local charity. Paul, 3 Moored Avenue, Chelmsleywood, Birmingham, B37 5SD.

● **SWAP** my boxed, as new, 6 month old, vidi Amiga + vidi chrome. For your digiview gold 4. Chris, Farnborough. (0252) 373177.

● **A420/1** learner curve with 100Mb SCSI h/d, Arm 3, 4Mb RAM, E120 9060 multisync and deskjet 500. Ideal for DTP. £2200 o.n.o. Will split. Also have 40Mb h/d £170. Call Alex on 0923 819256, after 8pm.

● **LASER**, helium neon (red), 2 milli-watt 240VAC, 2 mile range. Self contained including power supply unit. Randomly polarised, philips tube. £70. Phone Olly (0733) 214293, after 5pm and no you can't shoot things with it! Shame.

● **BABY** at case for main board 3 x 51/4, 8 slots, 200w PSU flip top type 41 x 35 x 16 CMS. £40. Phone 0489 578634.

● **YAMAHA** PS-470 keyboard, 12 accompaniments with variable chord/nass patterns, 21 instruments, digital synth. Custom Drummer £40. Also Amiga midi interface in, out, thru, plus 2 out/thru switchable £20. Call Richard (0924) 252199 after 6pm.

● **HELP** wanted to set up a user group, preferably portables, but others welcome. Write to: Damian Cooper, Emerald Close, Hants, PO7 8N2.

● **SINCLAIR QL** 128K plus software, boxed as new will swap for a printer or modem suitable for Atari 1040 STFM or sell £75. Phone Waterlooville near Portsmouth 0705 257765.

On-line

A breakthrough in MULTI-PLAYER entertainment

Got a modem - Join instantly!

Playing now,

the award-winning adult space fantasy **FEDERATION II**COMING SOON....The original, the legendary, the classic **MUD**From the U.S.A. the mind blowing 3D combat flight simulator **AIR WARRIOR**.**FREE** Membership as a special introductory offer.**LOG ON NOW TO FIND OUT MORE CALL 081-539 6763**

642a Lea Bridge Road London E10 6AP

MacEqualizer

Everything shipped by Federal Express

Macintosh IIfx 4/105HD, Keyboard	£3695
Macintosh IIfx 8/210HD, Keyboard	£4195
Macintosh IIfx 4/105HD, Keyboard, Apple 13", Apple 8*24-bit card	£4595
Macintosh SE/30 4/80HD	£1795
Macintosh Classic 2/52HD	£835
Animas 24-bit hand held colour scanner with MacCheese	£499
CD-ROM drive with 3Gb s/ware on 5 CDs (alone worth £1,000+)	£499
Ikegami/Sony Trinitron 20" 24-bit display	£2495
Mirror 19" mono A3 display for Classic and LC	£750
Microtek 600ZS scanner, 500DPI, 24-bit colour with Photoshop (£800+)	£1295
NEC LC-890XL Postscript laser, 8ppm and 4Mb (Appletalk/IBM)	£1495
Picture Press 24-bit compression at 60mips with JPEG	£645
Quick Image 24, 24-bit frame grabber in real time with Photoshop	£599
Sigma Double-up board, expand HDs by 100% or more	£225
Special - Mac Classic 2/52HD, Mirror 19" display, NEC LC-890XL Laser which normally alone retails at £2995	£2995

Call 0236 32922 9 to 6pm

* all prices exclusive

● **AMSTRAD CPC** software on tape and disk and half price (from £2 to £10). For list send SAE to: 68 Abbotsfield Road, South Woodham Ferrers, Essex, CM3 5SS or for quick contact phone 0245 320089.

● **WANTED** Amiga 500 base pack + mouse etc. No software required, 1 meg upgrade if possible, also no monitor/TV. Write 68 Abbotsfield Road, South Woodham Ferrers, CM3 5SS or phone on 0245 320089 will pay upto £150.

● **YAMAHA** PSS-270 stereo keyboard, 100 voices, 10 beats, demo + 13 segment display £80. Also British Telecom answer machine 'Robin' hardly used + good condition £50. List: 68 Abbotsfield Road, South Woodham Ferrers CM3 5SS.

● **40 ST** magazines, very good condition, +14 cover disks (including interphase), £20 o.n.o. +p+p Includes Zero, Ace, ST User, ST Action etc. Lots of other computer magazines in good condition, also. Phone 0989 65818.

● **WANTED** old computer hardware. Any condition, small charge considered. Monitors, keyboards, printers, joysticks etc. I Darren Littlewood, promise to answer any offers by return post. Send details to 33 Clay Flatt Lane, Rossington, Doncaster, S. Yorks, DN11 0AZ.

● **Q.L.** with manual abacus, easel, quilt, archive, will exchange for Spectrum +128 or sell for £65 + postage. Spectrum hardware, software utilities, microdrives, Alphacom printer. £15 + postage. RAM music maker with instruction. £15 + postage. Arnold 0257 278464.

● **DESK TOP** Publishing set-up for only £250. Write with SAE for sample print out set-up, contains monitor printer and keyboard plus much s/ware of all types or swap? P. Cardall, 3 Moored Avenue, Chelmsleywood, Birmingham, B37 5SD.

● **PSION** organiser, model CM, with mains adaptor. Cost over £100 new. Sell for only £40 (inc p+p) No o.n.o. this. Tel Nick, evenings on 063 472 3659.

● **R.G.B** splitter wanted, will pay £30 stand with light for digitizer camera, pay £40. Vido-chrome wanted, pay £9. Wanted Kickstart for two ROMs, pay £6. Steve (0628) 72275 6pm+.

● **8 INCH** disks (yes eight!), excellent condition, used only once. Approximately 125 in total, if your lacking in rare old disk size, you can have them all for £25+ postage. Phone Alan (0977) 5511018 (days).

● **WANTED R.G.B.** splitter must be cheap. Digi Droid stand with lights to use with digi-view and video camera etc. Will not take postal delivery, let down before. Seller must deliver please! Phone Steve (0628) 72275 6pm+.

● **TRINITRON** superfine pitch 14" colour monitor, only £80. Ask for Derek on 0905 360174

● **YAMAHA VSS-30** 8BIT sampling keyboard. Record and process any sound and replay it over the 32 key keyboard. About 5 seconds of excellent quality sound! Maximum rate of 17KHz! Only £40! Earlobes (?) Tel: Matthew 0344 775192.

● **ARCHIMEDES** 440 Riscos, 4 megabytes RAM, 20M, 3.5", 5.25" drives, colour monitor, original software includes 1st Word Plus, PC Emulator, Zarch, lots of PD, total worth £2000+, offers above £1300 accepted. Please contact Sunil 081 572 2788 evenings.

● **C64** 300 reset only pokes, just £2. C64 100 type in cheats, hints and password, just 31. ST 150 cheats on disk, only £2. Write to ST or C64 pokes, 12 Dudlet Road, Brighton, East Sussex, BN1 7GN.

● **YAMAHA** PS-700 Multi-Timbral keyboard. 50 drums, 50 accompaniments, 100 AWM voices, 8-track sequencer, midi in, out, thru, vector synth joystick, ported bass boost, boxed with manual, PSU and stand. £150. Call Richard (0924) 252199 after 6pm.

● **ARCHIMEDES** A310, 20Mb hard disk, PC Emulator, 51/4" disk drive interfaces, includes Risc Os + public domain software. All for £899 o.n.o. Phone (0270) 812082 in evening. Ask for Ian, will deliver computer to your door.

● **30 BLANK** disks unused, high density and double density £17 plus p+p. First come first served. Write to Malcolm Jacques, 8 Paisley House, Kershaw St, Laisteroyke, Bradford, B03 8PA.

● **TEXAS** instrument TI/99 computer, data recorder, extended basic, music make, Parsec cartridges introduction to basic tape. Exchange for Amiga s'ware, Acorn A3000 s'ware or almost anything. Tel 061 798 7279.

● **ACORN** A3000 contacts and PD software wanted (new user). Also wanted: Power board for poorley PCW 8256. Tel: 061 798 7279.

● **SUPERBASE** personal relational database £70. Amstrad printer DMP 3160 £70. Wanted Mathcad ver 2.5. Volkswriter word processor £70. Wordstar Release 5 handbook/manual £10. Tel 081 427 0755.

● **OPUS** 51/4 disk drive for BBC complete with manuals £40 o.n.o. or swap for 31/2 for Amiga. Interested, Steve Black, 18 Paul St Lochelly, Fife, KY5 9AL. Buyer pays p+p! Also Turtles game (Amiga) £8 o.n.o.

● **SINCLAIR QL** 128K computer for sale, two microdrives, Psion software (word processor, database etc). New keyboard membrane £55 inc postage. Boxed with manual and printer label. Write: David, 37 Muirfield Avenue, Swinton, S Yorks, S64 8TF. (swap Amiga DTP)

● **SINCLAIR QL**, c/w twin floppy drives, colour monitor, 768K trump card expansion, Psion word processor, spread sheet, database, graphics and other software, books, manuals. All good condition, £195. 021 477 5538 evenings or weekends.

FREE! Reader Ads Order Form

ALL ADVERTS WILL BE PRINTED FOR TWO CONSECUTIVE WEEKS ONLY

PLEASE TICK THE CATEGORY YOU WANT YOUR AD TO GO IN:

☐ ST☐ PC☐ CONSOLES☐ MODEMS☐ AMIGA☐ 8-BIT☐ PRINTERS☐ SOFTWARE☐ MONITORS☐ OTHER

NAME _____

TEL _____

ADDRESS _____

WRITE YOUR FREE AD HERE USING ONE BOX PER WORD IN BLOCK CAPITALS.

Send your reader ads to:
**SHOPPING EXPRESS READER ADS,
30 MONMOUTH STREET, BATH BA1 2BW**

Terms and conditions

- Sorry, NO trade ads. All reader ads must be from private individuals
- We cannot vouch for the quality of goods and/or services offered in this section. All ads are accepted in good faith.
- We reserve the right to amend or refuse reader ads at our discretion
- No pirated software may be sold through these columns. Any reader being offered non-originals should contact us.
- We cannot guarantee that reader ads will appear in particular issues of Express.
- The following declaration should be signed:
My advertisement conforms to the terms above and is legal, decent, honest and truthful

Signed _____

CARRY ON CODING!

The first products announced by Borland since it revealed its bid for Ashton-Tate, the company which brought you dBASE, are database packages for dBASE and Borland's own Paradox system. These will be based on the object oriented technology that Borland developed with ObjectVision and they will run under Windows, sharing objects such as forms, reports and queries. Although there have been versions of dBASE IV for almost every operating system from the Macintosh to SunOS and 386 UNIX, there hasn't been a Windows version yet.

Borland is also talking about a dBASE language compiler; dBASE itself has always been an interpreted language and a compiler should speed up dBASE applications considerably.

The products mentioned so far are Paradox for Windows and Object dBASE. Both will be compatible with

From database packages to Amiga assembly language code, Mary Branscombe looks at the latest ways to improve your programming

their DOS equivalents and Btrieve, SQL and Borland products including ObjectVision and C++.

FULLY ASSEMBLED

Any programmers just getting started with machine code or assembly language programming for the Amiga should take a look at ACC Assembler from the Amiga Coders Club, which is available from the Amiganuts Public Domain library on 0703 785680.

The disk includes a full set of programming tools with the A68K PD assembler, the Blink linker program and two conversion programs, Data2Obj and ConvertFD. These tools would be enough to assemble your source files into ready to run programs, but you also get a text editor (also called ACC) that can edit the source files. As you can run all the other tools on the disk from inside the ACC editor, this gives you more of a programming environment than just a collection of programs.

PHAR MORE MEMORY

If you want your programs to take advantage of the virtual memory management that you get with Microsoft's Windows 3, version 4.0 of Phar Lap's 386, DOS-Extender complies with the DOS Protected Mode Interface (DPMI) to help you write applications for Windows enhanced mode.

This DOS extender now supports all five industry standards for managing extended memory on the PC, including VCPI, the Virtual Control Programming Interface. This means that your Extend applications will work with EMS emulators like DESQview (which turn extended memory into expanded memory) and with Windows in real mode, which will run on any PC from an XT upwards.

Phar Lap's software has been used to build programs like Autodesk's AutoCAD and Wolfram Research's Mathematica.

TALKING COLOUR

There are many new versions of the Smalltalk/V programming language from Digitalk, including releases for OS/2 and the Macintosh.. Smalltalk/V DOS includes a colour extension kit and the Windows version includes new classes.■

Records	Organize	Fields	Go To	Exit
LASTNAME	Create new index Modify existing index Order records by index Activate .NDX index file Include .NDX index file Remove unwanted index tag Sort database on field list Unmark all records Erase marked records	NT	EMP ID	PHONE
Anderson			783-22-3333	(585)555-4556 C
Arlich			118-72-3777	(415)555-3489 A
Beman			437-22-6788	(683)555-8773 C
Bickaby			151-22-7773	(213)555-0554 A
Campbell			899-82-3333	(682)555-1278 C
Cohen			441-22-3333	(682)555-1974 C
Collins			551-22-3333	(217)555-4284 C
Daniels			661-22-3333	(583)555-0953 C
DeBello			771-22-3333	(689)555-0911 C
Dean			881-22-3333	(584)555-3737 C
Dickerson			861-28-3983	(381)555-3193 A
Drasin			677-82-3333	(682)555-7188 A
Drendon			991-22-3333	(283)555-1522 C
Egan			881-22-3333	(885)555-8674 C
Elvera			111-22-5555	(383)555-7337 C
Garnett			111-22-3777	(213)555-3232 A
			461-22-5553	(782)555-9121 A

• dBASE as it is today – the next version could run under Windows and include a compiler.



MAKING MACROS

I'm using Lattice C on my ST and I've been trying to use macros in some of my programs. I'm worried about the overhead though – does a macro take up more room than a function call?

John Wallace, Birkenhead

A macro is a line of your program that's replaced by something else when the code is compiled. If you're printing a title screen and the title of your program is too long to keep typing in, you can use a macro like:

```
#define TITLE Interactive 3D Graphics\
for fun and profit on your ST
```

The backslash \ lets you continue the text on the next line. Every time you use TITLE in your code, it will be replaced by the text of the title and a macro of this kind doesn't take up enough extra space to worry about.

Short macro calls, even with parameters, may produce less code than a function because you don't have the overhead of declaring the types of the variables and telling the function what to return. Compare:

```
#define funcmac(x,y) x*x+y*y
to:
```

```
float funmac(float x, float y)
{
  return x*x+y*y
}
```

As you don't need different macros for different data types, you can use the same macro with two sets of variable declarations to handle float and integer variables:

```
int i,j;
float u,v;
```

If you call funmac(i,j) this will be an integer arithmetic calculation, which is a lot faster than floating point maths on most machines. You'd have to write two separate functions to get the same effect without macros.

THE APPLIANCE OF SCIENCE – A LOOK AT COMPUTING

Computer Science: An overview

J. Glenn Brookshear

Addison Wesley

ISBN 0-8053-0264-6

There are many introductory texts on computers and programming written for students. But there are very few that are as clear and comprehensive as this book, now in its third edition. It's full of examples and illustrations and is very clearly written. It covers virtually every topic in programming, from operating systems to database structures and in many cases, it explains the subjects better than some specialist books in each field.

Rather than discussing specific machines, Brookshear explains how all computers work so that by the time you get to the programming techniques, you have a much better idea of why the

memory on your computer is limited and why reading a program in from tape or disk is so slow.

The section on operating systems covers the details of how an OS works rather than how to write one. Later sections in the book deal with the hands-on practicalities of programming, although Brookshear would rather get you to think about how to write a program than show you example code.

Whatever language you program in, whatever machine you use, this book should pull together all the tricks you've picked up and show you how to put your ideas together into programs.



• Computer Science: is as clear as it's comprehensive.

OVER TO YOU

Have you got a problem with your programs? Have you found a neat way to use macros? Write and tell me what's on your mind: Mary Branscombe, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW

**MASSIVE PRICE
REDUCTIONS
NOW EVEN
BIGGER
SAVINGS!!
LOOK FOR THE***

**TRILOGIC
AMIGA**

Supermarket

**ORDER
HOTLINE
0274-691115**

HOW TO ORDER
ALL PRICES INCLUDE VAT* - NO HIDDEN EXTRAS
(*at 17½% excluding books)

**CARRIAGE
FREE ON ALL ORDERS!**

Optional 1-2 day Express Delivery
£3.50 per order or £7.00 for guaranteed
next working day.

(UK mainland, exc. Scottish Highlands).

**FREE NEXT DAY DELIVERY ON
ORDERS OVER £500**

EXPORTS a speciality - add £1.99 for
surface mail or £3.99 for airmail.
(Computers, monitors & printers -
Please phone for carriage charges).

TO ORDER BY MAIL, PHONE OR FAX
- Prompt Despatch

Simply quote your c/card details, name &
address & your order & leave the rest to
us. You are not charged until the goods
are despatched. Or send cheque or PO
(payable to TRILOGIC), or cash
(send cash by registered post).

SALES ▶ 0274 691115

ENQUIRIES ▶ 0274 678062

FAX LINE ▶ 0274 600150

TRILOGIC

Dept. NCE, Unit 1
253 New Works Road
Bradford, BD12 0QP

Established 1984

TRILOGIC

TRILOGIC

TRILOGIC

TRILOGIC

TRILOGIC

TRILOGIC

TRILOGIC

TRILOGIC

TRILOGIC

TRILOGIC

TRILOGIC

TRILOGIC

OFFICIAL ORDERS FROM
GOVERNMENT & EDUCATIONAL
ESTABLISHMENTS WELCOME

THE DATAFLYERS UNBEATABLE VALUE FOR MONEY THE DATAFLYER 500 RANGE

Our low cost high performance SCSI controller & hard
drive units give your Amiga 500 real power. Similar
to the A590, plugging directly into the
Amiga's expansion slot, they are available with or
without a SCSI drive installed. Optional mains power
supply available but rarely necessary in our
experience. The built in SCSI interface offers fast,
autobooting performance (autoboot defensible by
holding down mouse button) at a low cost & is
compatible with any SCSI drive. Installation
instructions & utility disk included. 12 months
warranty. Ready formatted - just plug in & switch
on.

SCSI INTERFACE & HARD DRIVE HOUSING ONLY

OPTIONAL MAINS POWER SUPPLY £129.99

WITH 49meg 28ms SCSI drive fitted ONLY £209.99

WITH 60meg 28ms SCSI drive fitted ONLY £419.99

WITH 83meg 24ms SCSI drive fitted ONLY £469.99

WITH 111meg 15ms SCSI drive & psu ONLY £999.99

Drives up to 177meg available. P.O.A. Please ask for
separate Dataflyer leaflet. Managing your hard drive
is easy with DISKMASTER only £34.99 when
purchased with any Dataflyer.

THE DATAFLYER 2000 RANGE

Uses the same SCSI interface card as used in
Dataflyer 500, but fits internally. Mounting holes
drilled for most 3.5" SCSI drives. Available with SCSI
hard drives fitted as listed below. All are Autobooting,
have fast access times, & are self parking. An
installation & utility disk for formatting & partitioning
them is included. Up to 8 SCSI drives may be
connected to one Dataflyer controller card. Ready
formatted - just plug in & switch on.

SCSI interface card for Amiga 500 & 2000 ONLY £79.99

SCSI card with 49meg 28ms SCSI drive ONLY £324.99

SCSI card with 60meg 28ms SCSI drive ONLY £379.99

SCSI card with 83meg 24ms SCSI drive ONLY £419.99

SCSI card with 111meg 15ms SCSI drive ONLY £499.99

Drives up to 177meg available. P.O.A. Managing your hard drive is easy with DISKMASTER
only £34.99 when purchased with any Dataflyer.
Please ask for separate Dataflyer leaflet.

BASEBOARD A500 MEMORY UPGRADE

The BASEBOARD is a very successful high quality
memory upgrade card for your Amiga 500. It is
compatible with 1.2 & 1.3 mbs, & far & faster
Agnus chips. It accepts any 256K 4 Cmos Drams in
1/2 meg steps from 0 to 4 megs & auto configures to
give you the full 1 meg chip ram. It has proved to be
extremely compatible & reliable, though a disable
switch can be fitted if required. An optional add-on
board gives another 2 megs. No soldering is required,
though some technical skill helps: fitting the gary
adaptor invalidates the computers warranty.
Comprehensive instructions supplied. 12 months
warranty.

BASEBOARD unpopulated £89.99

XRAM 2 MEG ADDON CARD £79.99

BASEBOARD 12MEG £109.99

BASEBOARD 1MEG £129.99

BASEBOARD 2MEG £164.99

BASEBOARD 3MEG £199.99

BASEBOARD 4MEG £229.99

KSC POWER PC CARD

This fits in the 1/2 meg slot & boosts the Amiga's
ram to 1 meg, with battery backed clock. Runs most
PC software faster than on many XT's (programs over 120
kites including most well known PC programs). No
soldering required. & does not invalidate the
computers warranty. Supplied with MacOS 4.01 &
Gw Basic. Latest version supports A590 & other hard
drives. Comprehensive instructions supplied. 12
months warranty.

LOWER PRICE - NOW ONLY £229.99

OTHER HITECH UPGRADES

KICKSTART 1.3 ROM £29.99

FATTER AGNUS 8372A £89.99

8520A 10 CHIP £15.99

UPRATED A500 POWER PACK £44.99

A520 MODULATOR £24.99

FLICKER FIXER FOR 1500/2000 £299.99

FLICKER FIXER FOR A500 £299.99

SUPRA 8 MEG MEMORY CARD FOR AMIGA
1500/2000 £109.99

Unpopulated Uses 256K 4 Drams, in 2, 4, 6 or 8
meg stages

CMOS 256K 4 DRAMS - from £33.00 per meg

23W PLUG & COVER £2.99

23W SOCKET & COVER £2.99

DRIVE SWITCHES & ADAPTORS

DRIVE SWITCH 1 for disabling external drive DF1.
Fits between the drive port & drive connector. £10.99

BOOT SELECTOR SWITCH. Fits internally, &
enables boot drive to be the external drive. Disables
the internal one completely - i.e. the internal one
cannot be 'swapped' for the external one. £18.99

CYCLONE COPIER ADAPTOR fits between drive &
Amiga drive port. needs Cyclone software to work
(included free with Xcopy II) £10.99

QUALITY DISK STORAGE BOXES - LOCKABLE TINTED LID. ANTISTATIC

3.5" DISK LIBRARY CASE for 10 Disks £14.99

40 SIZE £6.99

80 SIZE £7.99

100 SIZE £8.99

150 SIZE Posso Stackable Drawer Type £18.99

250 SIZE £24.99

Special Offers

50 SIZE BOX - 10 Sony Disks Only £11.99

100 SIZE BOX - 25 Sony Disks Only £19.99

150 SIZE BOX - 50 Sony Disks Only £43.99

SONY BULK 3.5" DS/DD DISKS + FREE LABELS

PACK OF 10 £6.99

PACK OF 25 £14.99

PACK OF 50 £24.99

PACK OF 100 £44.99

BOX OF 500 £209.99

Sony branded disks add 50%

PRESENTATION, PAINTING & ANIMATION

MOVIESSETTER £59.99

IMAGINE £174.99

VIDEOSCAPE 3D £99.99

DISNEY ANIMATION STUDIO £89.99

DIGIPAIN 3 £49.99

DELUXE PAINT III £59.99

FANTAVISION £14.99

ALL PRICES INCLUDE VAT - NO HIDDEN EXTRAS

DESKTOP VIDEO PERIPHERALS

DIGIVIEW GOLD V4 £99.99

VIDI + VIDICHROME SPECIAL PRICE £99.99

RGB SPLITTER FOR VIDI £59.99

HITACHI MONOCHROME CAMERA £209.99

MINIGEN £104.99

REDALE 8802 £174.99

REDALE SUPER 8802 P.O.A.

G2 VIDEO CENTRE £759.99

COLOURPIC £269.99

SUPERPIC £489.99

DIGIVIEW 4 + DIGIPOINT 3 any £129.99

VIDEO TITLING

VIDEO TITLER 3 (2 drives & 1meg required) £109.99

DELUXE VIDEO £79.99

PIXIMATE £34.99

BROADCAST TITLER 2 2Meg req'd £174.99

CAD & DRAWING - 2D/3D

X CAD DESIGNER £79.99

PROFESSIONAL DRAW 2.0 £84.99

SCULPT 3DXL 1meg minimum £99.99

SCULPT ANIMATE 4D JUNIOR £79.99

VIDEOS (VHS FORMAT ONLY)

TRILOGIC'S INTRODUCTION TO THE
COMMODORE AMIGA 500 Part 1 Covers all the
first time Amiga A500 user needs to know, including
unpacking it, connecting the modulator & mouse,
copying workbench, connecting external disk drives,
peripherals & memory expansions will worth £14.99
or free with any Amiga purchased from us. Also
serves to show just what can be done with an Amiga.
Q2 genlock, some software & home video equipment.
1 Running time: approx 30 min. £10.99

PROFESSIONAL TECHNIQUES FOR DPAINT III A
60 minute video showing, you step by step, how to
use DPaint III & more advanced & spectacular
features. £19.99

MONITOR PLINTHS & STANDS

MONITOR PLINTH 1 Simple but effective.
This is a steel plinth which fits over the Amiga
upon which most monitors & small tvs sit. £24.99

MONITOR PLINTH 2 With Shelf for External Disk
Drive etc. This is similar to the Amiga Control Centre
- it fits over the Amiga with a slot for the disk
drive, & a shelf under the monitor for external drives.
Open backed. £34.99

MONITOR PLINTH MOUSE JOYSTICK £7.99

EXTENSION LEAD KIT PER PAIR £7.99

MONITOR SWIVEL/TILT BASE
for 12 to 14" tvs & monitors £17.99

AMIGA TV & MONITOR LEADS

If your tv has an RGB input, you will get a much
clearer picture connecting the Amiga to this using one
of our leads, rather than via the modulator. All our
monitor leads give the full range of colours, & include
the audio leads unless otherwise stated.

AL1 AMIGA to scart - works with most scart
equipped tvs & monitors, including Sony, Philips,
Normande, Ferguson, Toshiba Mitsubishi,
ITT etc. £12.99

AL2 AMIGA to Ferguson
with 7 or 8 pin Din socket eg MC01 £12.99

AL4 AMIGA to Hitachi/Grandada
with 7 pin Din socket £12.99

AL6 AMIGA to Amstrad CPC colour monitor
with 6 pin din plug, no audio £11.99

AL7 AMIGA to 1084s monitor with 6 pin
din socket & two phono sockets (audio) £14.99

AL7P AMIGA TO PHILIPS 8833 MK2 £14.99

AL7D AMIGA to 1084s D monitor
with 9 pin D socket & two phono sockets £14.99

AL8 AMIGA to CGA monitor - 16 colours,
no sound. 9 pin D plug. £11.99

AL11 AMIGA to Multisync monitor
with 9 pin D socket, no audio. £11.99

AL12 AMIGA to Multisync monitor
with 15w 3 row D socket, no audio. £13.99

AL13 Amiga to Multisync monitor
with 15 pin 3 row D plug, no audio. £13.99

AL15 AMIGA to Taxan with 8 pin EIA connector,
no audio. £15.99

AL16 AMIGA to Tetaung TMO1 colour monitor,
no audio. £11.99

MODULATOR EXTENSION LEAD. Enables the
modulator to be moved - reduces its overhang &
makes for a more secure connection. £10.99

MODULATOR SPLITTER. Enables the modulator &
monitor lead to be connected at the same time - the
modulator is required if you wish to tape the Amiga
on a VCR. £16.99

GENLOCK SPLITTER. Enables a genlock & monitor
lead to be connected at the same time. £19.99

Longer Leads can be made to order - add £1.50 per
metre to the list price.

SCART SWITCHES TV - MONITOR SHARERS

TV/MONITOR SHARER A for Scart Tvs &
monitors Converts one scart socket into two -
switch selects input one or input two. Wired for RGB
& composite & stereo sound - suitable for home
computers, vcrs & satellite receivers. £19.99

Plugs into the scart socket of your tv or monitor &
+ VCR or... Computer & satellite receiver etc.
Push button switch selects input 1 or input 2.
No additional leads required - your existing scart
leads just plug into the sharer.

PRINTER ACCESSORIES

2 WAY PRINTER SWITCH (25w D sockets)
now with free computer lead £24.99

3 WAY PRINTER SWITCH (25w D sockets)
now with free computer lead £27.99

4 WAY PRINTER SWITCH (25w D sockets)
now with free computer lead £33.99

2 WAY CROSSOVER (25w D sockets)
now with free computer lead £34.99

2 WAY PRINTER SWITCH (36w sockets)
now with free computer lead £26.99

3 WAY PRINTER SWITCH (36w sockets)
now with free computer lead £29.99

4 WAY PRINTER SWITCH (36w sockets)
now with free computer lead £34.99

CONTINUOUS 80gsm PAPER 11 "9.5"
Box of 2000 Microprint Margins £21.99

CONTINUOUS 80gsm PAPER 11 "9.5"
Box of 1750 Microprint Margins £31.99

PACKS OF 500 SINGLE SHEETS.
A4 60gsm white £5.99

A4 60gsm blue, green, yellow, or red
Prices are up to £4.00 box cheaper to callers because
of savings in postage. £9.99

CONTINUOUS LABELS 89 "39mm,
1 across, pack of 1000 £8.99

COPY HOLDER Free standing type £17.99

COPY HOLDER Table top edge clamping type £17.99

PRINTER STAND standard width £13.99

PRINTER STAND for wide carriage printers £15.99

AMIGA PRINTER & MODEM LEADS

FOR A500/2000/3000

AMP1 AMIGA to parallel printer
approx 1.5m long £9.99

AMP2 AMIGA to parallel printer
approx 3m long £12.99

AMP5 AMIGA to parallel printer
approx 5m long £16.99

MF1 25way male to female lead, approx 1.5m £11.99

MF2 36way male to female lead, approx 1.5m £12.99

MM1 25way male to male lead, approx 1.5m £11.99

MM2 36way male to male lead, approx 1.5m £12.99

NML1 Null modem lead for linking 2 Amiga £8.99

ML1 25way female to male modem lead,
approx 1.0m £11.99

ML2 25way female to din plug modem lead
- state modem £10.99

ML3 Designer modem lead. £11.99

BEL1 BBC Emulator lead. 25way to 9 pin
din plug. £8.99

ASPI AMIGA serial printer lead,
25way male/female £11.99

PRINTER RIBBONS (COMPATIBLE TYPES)

STAR LC24-ID £8.99

STAR LC10 £4.49

STAR LC10 COLOUR £8.99

CITIZEN 1200/1200+/180E £4.49

CITIZEN 1200/1200+/180E CITIZEN BRAND
RIBBON £8.99

COMMODORE MPS801 £5.99

COMMODORE MPS803 £3.99

PANASONIC KXP1081 £4.49

PANASONIC KXP1081/124 £4.49

AMSTRAD DMP2000/3000/3160/3250 £3.49

Buy 3 get 1 free.

SAMPLING

AUDIOMASTER III £54.99

PERFECT SOUND inc budget Stereo sampler £52.99

MASTERSOUND inc budget mono sampler £41.99

Special Offer

The *Express* guide to computing at a grass roots level
this week features a complete user groups round-up

JOIN THE EXPRESS CONFERENCES ON ASPECTS (061-792 0260) AND CIX (081-399 5252)

FANZINES

USER GROUPS

BBS

A

B

C

□

1

EINSTEIN PD USER GROUP – Help and advice for

[illegible]

Einstein users. Over 100 disks of PD software. Send SAE to SW Knowles, 23 Howdsworth Rise, Arnold, Nottingham, NG5 8HZ

ELITE PLAYER GROUP - Swap hints, tips, etc. Fanatics welcome. Beginners welcome. Write: Ian Hurst, 7 Perrybrook Walk, Ashton in Makerfield, Wigan, Lancs WN4 8TR.

ELMSOFT PUBLIC DOMAIN SERVICE for the ST any weekend at Camden canal market, Haven Street, London

EMULATE. For Amiga, Amex. Monthly newsletter. Write to Pat 12b Northbrooks, Hallow, N Essex

ENTERPRISE - William Creaser, 6 Provident Street, Shaw, Oldham, DL2 8AQ. Independent Enterprise User group. Tel 0706 881382

ENTERPRISE - Tim Box, Independent Enterprise User Group, 50 Holdenhurst Avenue, Finchley, London N12 0HX. Tel 081-346 8032

ENET (like Econet) - T K Boyd, Enet (Amcom) User Gp, Seaford Cottage, Petworth, West Sussex

EUG - The Acorn Electron User Group. "The ELK is not dead yet" Send large SAE for details to EUG 134 Great Knightleys, Basildon, Essex ss15 5HQ.

EURO-PALS - Contact service. Make computer friends anywhere and everywhere. Send £4 to Julian Ross, 2 Bysouth Close, Clayhall, Ilford, Essex IG5 0XN.

F

FIND YOUR LOCAL CLUB - British Association of Computer Clubs. Database of all user groups in the UK. Banc y rhyon, 14 Bron Y Glyn, Bronwydd Arms, Carmarthen SA33 6JB.

FORTH Language - Douglas Neale, FIG (FORTH Interest Group) UK, 58 Woodland Way, Morden, Surrey SM4 4DS

FRACTALS/CHAOS THEORY - Andy Lunness, 69 Bronte Avenue, Bury, Lancs BL9 9RN. Telephone 061-764 6469

G

GENEALOGISTS - Computer Group, Society of Genealogists, 14 Charterhouse Buildings, London EC1M 7BA. 071-251 8799

GENERAL HOME MICROS - Steve Winter, Chic Computer Club, PO BOX 121, Gerrards Cross, Bucks SL9 9JP 0753 884473

GEOS USER GROUP - for C64 and 128 owners. Disk based magazine. Send blank disk to GUG (UK) 110 Deansway, Woodloes Park, Warwick CV34 5DQ

GUG (UK) - GEOS User Group for C64/128. Also non-GEOS PD library. Send disk and return postage for GEOS, SAE for non-GEOS to GUG (UK), 110 Deansway, Woodloes Park, Warwick CV34 5DQ

GROUND FLOOR USER GROUP - support for all serious users of PC, ST, Amiga and PCW. Meets monthly in Calderdale, West Yorkshire. Further information from Jae on 0422 844991 days or 0422 845789 eves.

GUAGE - Martin Houston CUG (UK) Houston Technology Ltd, 14 Arden Oak Rd, Sheldon Birmingham BS26 3LX. Telephone 021-722 3168

H

HOUSING ASSOCIATIONS - Caroline Maries, Micro Users Ltd, Beaver Housing society, 23 Lewisham High Street, London SE13. Tel 081-318 1126

HEALTH WORKERS - Sue Mckendrick, Healthlink, 164 Windsor Rd, Ashton-in-Makerfield, Wigan WN4 9ES. Voice: 0942 712 385

I

IBM PC USER GROUP - PO BOX 360 Harrow HA1 4LQ. 081-863 1191 BBS 081-863 6646

INERTIA ADVENTURES - A ray of light in the dark cavern of the text adventure. Do you dare to enter this saga? Proceed by phoning 0265 51851 for details.

J

JOMAC USER GROUP - Spectrum and Amiga tips and pokes sent every month. Write with SAE to Jomac's, Filey Grove, Rhodes Street, Hull

JUPITER ACE - John Charter, Jupiter Ace Forth User Group, 17 Spring Wood Close, Dunston, Chesterfield S41 8BS. Tel 0246 237555

L

LISKEARD AMIGA USERS GROUP - For tips, help and information exchange. Contact Phil Golding, 19 Pound Street, Liskeard, Cornwall PL14 3JR. (0577) 46217.

LOCAL AUTHORITIES - Local Authority Micro User Group, John New, Borough Engineer's Dept, Municipal Offices, North Quay, Weymouth, Dorset DT4 8TA. Tel 0305 785101 ext 272

LOTUS PRODUCTS - Lotus User Group, 79-80 Peasod St, Windsor, Berks SL4 1DH. Telephone 0753 841686

LYNX - R B Jones, Lynx User Group, 39 Ashton Close, Needingworth, St Ives, Cambs

LYNX DISK USER GROUP - J Koushappas. 172 Pasteur Gdns, London N18. Tel: 081 807 3859

LYNX LINK - Cards bought and sold and exchanged. LYNX fanzine each month. Send SAE to Peter Terry, 32 Boma Road, Trentham, Stoke, Staffordshire, ST4 8EB.

M

MAC SOFT - six games for the Amstrad CPC6128. Send SAE, blank disk and 50p copy charge to Macsoft, 2 South Meade, Maghull, Liverpool, L31 8EF.

MAGNETIC MEDIA HANDLE WITH CARE - Amiga disk fanzine with news, reviews, music, games, utilities, userhelp. At least two disks per month. Each issue £2.80. Write to Magnetic Media HWC, 25 Rigbourne Hill, Beccles, Suffolk NR34 9JC.

MEGADRIVE CONSOLE CLUB - Used and new games sold, also exchange system and games brought from £6-£22. Write to Andrew Stanford, MCC, 15 Fields Park Drive, Alcester, Warwicks, B49 6QR or Tel: 0789 764039 after 4pm

MEMOTECH FILE - 93b St Johns Road, Biddulph, Staffs ST8 6LL

MEMOTECH - Phil Eyres - Memotech Owners Club, 23 Denmead Road, Harefield, Southampton SO2 5GS. Tel 0703 585106

MICRO-DESIGN USER GROUP - a new group for those PCW owners requiring assistance and advice with this DTP package. Large clip art library available. Phone Phil on 0709 543390

MID CORNWALL COMPUTER CO-OP - Atari ST. 8 Victoria road, Roche, St Austel, Cornwall PL 26 8JF. Telephone 0726 890473

MIDI/MUSIC - Spectrum music machine/MIDI user group. Magazine on tape, plus programs and lots more. For more details contact Sean Sanderson on 05242 62258

MOTOROLA 68xxx MICROS - write to Rick Applegate, 68 Microgroup, 8 Great Cob, Springfield, Chelmsford, Essex. BBS tel 081-316 7402

MSX SYSTEMS - write to Keith Neal, MSX Link, Austerby House, 80 Austerby, Bourne, Lincolnshire PE10 9JL

MUG USER GROUP - If you either play or run a multi-user game then write with details to the MUG User Group, 4 Garden Close, Penrith, Cumbria, CA11 7UD.

N

NASCOM/80-BUS/CPM - Scorpio Systems, PO BOX 286, Aylesbury, Bucks HP22 6PU. Tel 0296 624868

NEW BUG COMPUTER CLUB - Support for all machines. Meets weekly at Oxclose Multi-Purpose Centre in Washington each Tuesday at 7pm. All welcome, visitors 50p

NEWBRAIN - Ron Bury, NewBrain Support Grp, 70 Cranberry Lane, Darwen, Lancs BB3 2HL. Tel 0254 771891

NIMBUG - write to 13 Belle Vue Ave, Gosforth, Newcastle-upon-Tyne NE3 1AH. Tel 091-285 7806

NINTENDO GAMEBOY - I would like to start a user group for the Game Boy. Write to Justin Spencer, 2 Rose Villas, Thurnholmes Farm, Owston Ferry, Near Doncaster DN9 1BE or Tel 042772588

NORTHERN IRELAND AMIGA USERS - Send £2 for disk-based newsletter. Tips, news, reviews etc. NIAU, 98 Crebilly Road, Ballymena, County Antrim BT42 4DS.

NW ARCHIMEDES USER GROUP - Meets every Friday at Citizens Advice Bureau, next to Spectrum arena in Birchwood, Warrington. Ring Paul on 051-426 3915 after 6pm

O

OBSOLETE COMPUTER CLUB - Established 1990 to preserve and support Pre 1986 micros. Applications in writing to Mr S Walters, 42 Achilles Road, London NW6 1EA stating system details, date and history. All systems, micros and minis.

OLIVETTI PC1/PCS USER GROUP - Help with all aspects of these machines. Tel 0924 892106 or write to 68 Queen Elizabeth Drive, Normanton, W Yorks

ORIC ENTHUSIASTS - The contact point for all Oric support. 8 Staley Hall Road, Stalybridge, Cheshire SK15 3DT. Tel: 061-303 7369.

OS/2 - Karen Burns, OS/2 User Group, Cecily Hill Castle, Cirencester, Glos LG7 2EF. Tel 0285 655888

OSBORNE/CPM/MSDOS - write to Jeremy Browne BOOG, 102a Aldershot Road, Fleet, Hants GU13 9NY. Tel 0252 621745 voice or 626233 BB

P

PAGESTREAM USERS GROUP - all Atari/Amiga owners of Pagestream send large SAE to PUG, 70 Offerton Lane, Stockport, SK2 5BS. Include all your tips please.

PAS PD for the ST. Send 75p for the latest details and disk catalogue (refundable). Write to PAS, 97 Holland Street, Ebbw Vale, Gwent NP3 6HY.

PC INDEPENDENT USER CLUB - Helpline service, bi-monthly journal, shareware/PD, local meetings, bulletin board, £29-£50 pa (£36 businesses, £19 students) Free 30 day trial 0732 771512.

PHILOSOPHY APPLE - G Haines, Chinese Room Club, 43 Cornwallis Gdns, Hastings, East Sussex TN34 1LX. Tel 0424 714 102

PICK OPERATING SYSTEM - Hugh Kellit, UK Pick Users Assocn, PO BOX 907, London N10 2SB. 081-462 4666

POSTSCRIPT USERS GROUP - JP McKeown, 3 Pedn Moran, St Mawes, Cornwall TR2 5BA.

PRESTEL - Andy Leeder, ClubSpot 810, Church Farm, Stratton St Michael, Norwich, Norfolk, NRQ15 2QB

PSION ORGANISER - Mike O'Regan, IPSO, 130 Stapleford Ln, Beeston, Nottingham NG9 6GB. Tel 0602 735482

PUBLIC ADVERTISING LIBRARY - For Speccy owners. Two free C90 tapes when you join, as long as you send an adventure game original. We have some adventures available but we want more. For more info send an SAE now. to Alec Carswell (PAL), 16 Montgomery Avenue, Beith, Ayrshire, Scotland, KA15 1EL

PUC'S ATARI PORTFOLIO USER GROUP - New user group for the Portfolio pocket PC/organiser. Offers: newsletters, technical assistance, Talkback feature, software/hardware updates and hot news. Tel 0635 73662.

Q

QUANTA, QL AND THOR USER GROUP - The Corner House, Loxley, Warwick, CV35 9JT. Tel: 0789 842543

R

RESEARCH MACHINES - Steve Rochford RM National User Group, George Stephenson High School, Southgate, Killingworth, Newcastle NE12 0SA. Tel 091-268 2002

REVELATION (PICK) - write to Malcolm Frame, UK Revelation User Group, 136 Saint Albans Road, Watford WD2 4AE or Telephone 0923 35515

R:BASE - write to Mrs Tansy Beal, R:Base User Group c/o Room A2044 BBC Woodlands, 80 Woods Lane, London W12 0TT. Telephone 081-576 7187

S

SA40 User group - write to Roy Williams, 17 Grove Road, Acton, London W5 6AW.

SANYO MBC-550 - M H Syed, Wistaria, 53 Acacia Grove, New Malden, Surrey KT3 3BP. Tel 081-942 9009

SCHNEIDER EURO PC - Alex Kefford, SEPUG, 11 Crabbet Road, Three Bridges, Crawley, West Sussex RH10 1NF

SCIENTIFIC PC USERS - write to Tim Bunning, SPCUG PO BOX 17, Retford, Notts DN22 6BQ Tel 0777 709009

SEGA SWAP CLUB - Exchange your old megadrive games with other members. For details send SAE to SSC, 10 Sandwith Road, Todwill, Sheffield, S31 0JP

SERIOUS GAMER - Flat C, 43 Colvestone Crescent, London E8 2LG. Telephone 071 241 5446.

SERVICE - Small friendly games swapping for Amiga. Over 200 original titles. Free PD swaps! SAE 13 Bournville Lane, Birmingham B30 2JY. Tel. 021-459 7576.

SERVICES USERS - write to Squadron Leader G Howson, Services Personal Computer Association, Stik Eng 15a

SPOTLIGHT ON

THE SIMPLY CLUB

If you're the sort of person who enjoys a bit of aeronautical excitement from the comfort of your own armchair then the Simply Club could be just up your street.

Simply is a specialist British club dedicated to the promotion and development of precision computer flying and air navigation skills.

The basis of the club is the NAVPAC achievement scheme which is a series of four training programmes which aims to take members from a novice stage of flying to a "seriously good" standard. The first level covers basic flying knowledge, aircraft control and visual navigation, while the fourth level concentrates on precision approaches.

The club uses the MS Flightsim 3 and 4 software running a PC as the basis for the scheme, though it plans to extend to other software in the near future. New

members always start at level one and progress to each level when they choose. There is also an assessment scheme for which the club awards Proficiency Certificates.

On joining the new member receives an area visual navigation chart, basic visual navigation instructions, a list of assignments, and a demo disk which is also used for assessments submissions. Each new level is available upon payment of that level's NAVPAC fee.

The Club also issues a very in-depth fanzine packed full of aviation information and flightsim tips.

Annual subscription costs £10, and the NAVPAC and assessment fees cost between £5 and £10 depending on disk size and level.

Write to the Simply Club at 2 Henley Manor, Raincliffe Avenue, Scarborough YO12 5BU.

HQSTC RAF High Wycombe, Buckinghamshire

SHAREWARE SWAPSHOP - 400 plus PC shareware disks available free. Semnd Blank disk (3.5 or 5.25) and return postage for a copy of our catalogue to The SSS, 69 Tillingbourne Green, St Mary Cray, Oropington, Kent, BR5 2EX

SHARP USERS CLUB - contact Andrew Ferguson, 11 Harcourt Close, Henley-on-Thames, Oxon RG9 1UZ. Tel 0491 574850 evenings only

SHREWSBURY AMIGA USER GROUP - 1 Haughmond Court, Featherbed Lane, Harlescott, Shrewsbury, SY1 4NJ. Please enclose an SAE

SIRIUS - Simon Sheppard, ISSUE PO BOX 222, Brighton BN1 3BR

SHAREWARE KING - quality PC shareware. Over 3000 disks. Send SAE plus disks for catalogue to C Smith, 10 Penwood Close, Westbury, Wilts, BA13 3LW. Tel 0703 865263

SHREWSBURY AMIGA USER GROUP - informal meetings and lots more planned. Write with SAE to A Preece, 1 Haughmond Court, Featherbed Lane, Harlescott, Shrewsbury, SY1 4NJ.

SOFTWARE EXCHANGE - send an SAE for info to 13 Bourneville Lane, Birmingham, B30 2JY or phone 0860 444594 from 12pm to 10pm

SOFTWARE EXCHANGE THE COMMODORE CLUB - For all C64, Vic 20 and Comm 16 users. All welcome. Send SAE for details to Commodore Club, 36 Ongar Way, Benton, Newcastle Upon Tyne, Tyne and Wear, NE12 8ED.

SOFTWARE EXCHANGE SERVICE - buy/sell/swap Amiga, ST and PC. SAE for info to 13 Bourneville Lane, Birmingham B30 2JY or call 0860 444594.

SOLITUDE MOUNTAIN - Friendly new Amiga user group. Send blank disk or 50p to 565 Heathway, Dagenham, Essex

SORD M-23 - B Nicholson, Schlumberger Norge A/S Bjergstedveien, 4007 Stavanger, Norway. 474 657002

SMART SYSTEMS USERS - write to Francis Barton, Basement Holy Rosary church, Louis Street, Chapeltown, Leeds LS7 4BP. Tel 0532 629202

SOFTWARE EXCHANGE SERVICE - for info send SAE to 13 Bourneville Lane, Birmingham, B30 2JY. New telephone number: 021 459 7576. Buy/swap/sell.

SOUTH 16 AMIGA USER GROUP - the UK's number one Amiga user group. For more information send SAE to South 16, PO box 16, Southampton, SO9 7AU. Now!

SOUTHERN AND DISTRICT. PC and ST user group. Tony Lowes 61A Broadway West, Leigh on Sea, Essex S59 2BX

SPANDEFANG SOFTWARE - 68000 AC Coders magazine. Send £2 for sample to 4 Cambridge Terrace, Harrogate, North Yorkshire, MG1 1PN. Atari, ST, IBM PC. 3.5 inch disk included in price.

SPECTRUM PLUS 3 USER GROUP - monthly magazine. 57 Lovers Walk, Dunstable, Bedfordshire, LU5 4BG

SPECTRUM DISCOVERY CLUB - magazine on disk for the Opus Discovery Disk Drive and the Sam Coupé. BD Mumford, 57 St Saviours Road, West Croydon, Surrey, CRO 2XE

ST USER GROUP - Send an SAE for a news letter to ST User Group, Ben Dobson, 1 Ryedale Way, Selby, North Yorkshire YO8 9PB.

STEN - the ST enthusiasts newsletter issue three now ready. Send a disk and SAE for your copy now. Postal Trivia League starting. Interested? Write to 14 School Road, Morningside, Newmans.

STOS magazine, out every month. Send an SAE for full details to 11 Shore Crescent, Bishops, Waltham, Hants SO3 1DZ

STOURBRIDGE ATARI USERS' GROUP - for 8-bit Atari computers. Send SAE to LK Taylor, 99 Bredon Road, Stourbridge, West Midlands, DY8 4LA. Telephone 0384 379575

STUPID FLOWER PD - new library for ST users. Send an SAE for a free catalogue to SFPD, 3 Read Mead, Glastonbury, Somerset BA6 8ON or call 0458 35027 and ask for Matt.

SUPERPROJECT - Geoff Groom, 3 Sunnymede Ave, Carshalton Beeches, Surrey, SM5 4JA. Tel 081-643

3336

SYNCROSOFT - Exclusive 64 computer information. £2.95 to join, including p&p. Make cheques to Syncrosoft and send them to 9-10 Morland Gdns, Southall, Middx UB1 3DY

SYRACUSE ARCHIMEDES DISK MAGAZINE - out now only £4.99. Includes the magazine disk plus two disks of public domain software. Send to Aste Wythenee House, 10 Alastair Crescent, Prenton, Wirral, L43 0UR.

T

TAS (DATABASE) - Neil Hegarty, TASUG C/O Solutions for You, 1st Floor, 2 Lytton Rd, New Barnet, Herts EN5 5BY. Tel 081-441 1133, BBS 081-449 4171

TCS PD - over 250 disks. Only 99p. Send SAE to 40 Upton Gardens, Tarring, West Worthing, Sussex.

TANDY/MS-DOS - Roger Storrs, NATGUG Oakfield Ldge, Ram Hill, Coalpit Heath, Bristol BS12 2TY. Telephone 0454 772 920

TELECOMMS USERS GROUP - Interested in forming a Business Users Telecommms Club? If so then contact John Lever, Systems Services, Little Thatches, Rushden, Nr Buntingford, Herts, SG9 0SH. Tel 076 388393

TEXAS T199/4a - Peter Brooks, International TI User Group 96 Banbury road, Oxford OX2 6JT. Telephone 0865 510822.

THUNDERNEWS - CBM 64 user magazine on disk/tape. Send sae for details and competition to 159 Hough Road, Wallsall, West Midlands WS2 9BG

TIUGUK - T199/4A user group UK for S/W on disk, tape and module. Offers magazine and help. Write with SAE for more details to Peter Walker, 24 Bacons Drive, Cuffley, Potters Bar, Herts EN6

TRANSPUTER - Howard Oakley, Transputer User Group, Brooklands Lodge, Park View Close, Wroxall, Ventnor, Isle of Wight

TURBO - SAM Coupé user group. Six newsletters and six magazines each year plus a big PD library. £10 for a year. SAE for information to TURBO, 8 Healet, Lakeside, Tamworth, Staffs, B77 2RF. Established January 1990.

TYPECAST PDL - Atari ST/STE PD. Solely for DTP, WP, Art, clip art, no games. Send disk and SAE for disk catalogue to 31 Hartfield Crescent, West Wickham, Kent.

U

UK SOFTWARE EXCHANGE CLUB - Swap your used programs. Free membership. Atari ST and Amiga originals. SAE for details. No obligation. Write to UKSEC (SE), 15 Tunwell Greave, Sheffield S5 9GB.

UNIX USERS - UKUUG Secretariat Owles Hall, Buntingford, Herts, SG9 9PL. Tel 0763 73039 /73255 (fax)

V

VENTURA PUBLISHING - VPU (Ventura Publisher User group) Linda Liddell VPU c/o LLA Lound House, Forncett St Mary, Norfolk, NR16 1JP. Tel 0508 41580

W

WAKEFILED AND DISTRICT AMIGA USERS - interested in forming a local Amiga users' group? Contact Eddy on 0924 361101.

WHITE HEAD PDL - Atari ST PD from £1.40 per disk. Send two second class stamps for latest list to Hakan Akbas, White Head PDL, 15 Cavendish Mansions, Clapton Square, London E5.

WORDPERFECT - Michael Norman, Wordperfect User Group (UK) Dove Barn, Manor Farm, Wootton Woodstock, Oxon, OX7 1DX. Tel 0992 850500.

WORDPERFECT - Dr Ian Barton, A Perfect World, High Rigg, Alma Rd, Tideswell, Derbys SK17 8LS. Tel 0298 871 925

THE WOOLMOOLOO CLUB - If you like Jean-Michelle Jarre then join the club. Write to Bryan McPhail, 14 Wentworth Square, Kilwinning, Ayrshire, Scotland KA13 6RQ. Please state NCE 131.2.

Bug Bash is here. *Bug Bash* is one of those rarest of Amiga PD titles. A professionally programmed game for the price of a big bag of air. *Bug Bash* comes from the chaps at Amiganuts and jolly good it is too.

Bug Bash is a scrolling shoot-'em-up-come-platform game and features some of the most bodacious graphics and gnarliest sounds you'll ever see or hear on the Amiga (well, for free anyway). The game is cute with a capital C and for those of you with a twisted disposition, it's best avoided. The bad guys are cute, the good guys are cute, the backgrounds are cute, even the platforms are cute.

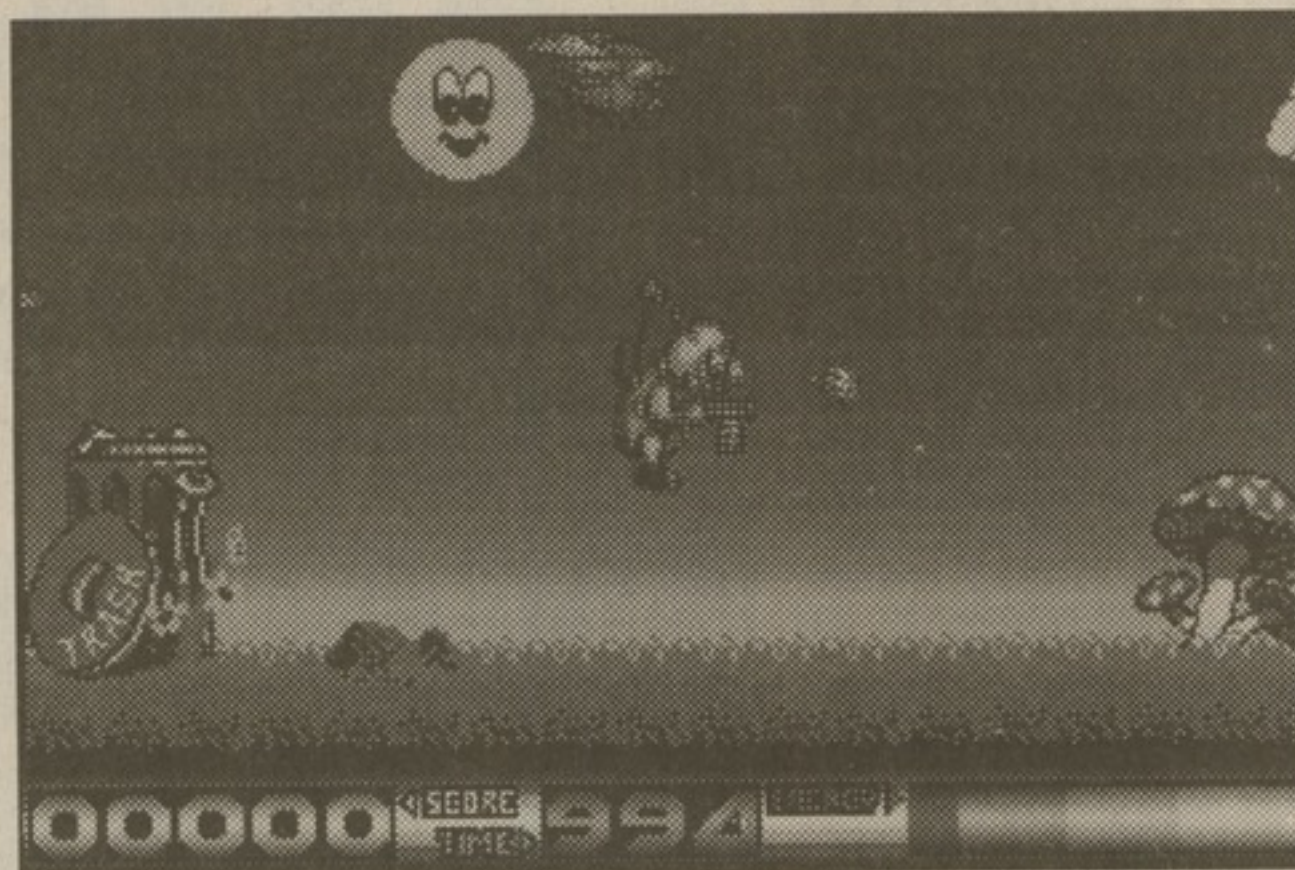
If you can counter the nausea the cuteness can cause, then you'll find yourself with a superb game. The character you control isn't actually named, so we'll call him Spanky for safety's sake. Spanky has a problem. His garden is infested with bugs. There are bees, wasps, beetles and all manner of creepy-crawlies.

Fortunately, Spanky is armed with a can of bug spray. He can zap the horrible little critters out of the sky, either jumping to reach them, or activating his helicopter back-pack. The point of all this, apart from dealing death to ravenous insects, is to clear the garden of litter.

To do this, you simply pick up any old sodapop cans and bits of paper you

THE PD COLUMN

This week Frank O'Connor delves into the PD sector and finds a professionally programmed Amiga game and comic relief and Pinball wizardry for PC users



• *Amiganuts brings us the cute with a capital C Bug Bash. Protect your garden by zap ping creepy crawlies with your can of bug spray along to great sound effects and music.*

find, taking them back to a litter bin, where you deposit them for bonus points. Bonus pick ups for energy are also available at various intervals. Getting to grips with the control method is tricky, running and jumping are easy, but piloting the helicopter is a real pain.

Graphically, *Bug Bash* is a treat. It's colourful and packed to the brim with

lovely, wonderfully animated sprites. The sound effects and music complement the game perfectly and the overall effect is a polished and spiffy game which wouldn't look out of place on the shelves of your local software emporium.

The game isn't exactly PD, more of an agreement with a programmer. This makes no difference to the average

punter, it just means that you can't copy the software freely. Still, it's cheap, it's cheerful and it's a complete bargain.

PD GETS ON THE PC

IBM PC owners are being catered for extremely well at the moment. The PC has seen a rise in popularity with the acceptance of the PC as a games machine. This trend has been reflected in the PD scene of late, with more games oriented software seeing the light of day.

Owners of EGA and VGA machines are well aware of how graphically capable their machine is and one neat little PD game that shows this off, is *Captain Comic*. This game and many others, is available from Benetech. The game is a neat scrolling platform job, with more than a little in common with *Wonder Boy* and other titles of that ilk.

Captain Comic looks like a chimpanzee. Quite how an ape achieved

NEW!

Benetech SystemsTM

MENU DRIVEN INSTALLATION PROGRAM INCLUDED WITH ALL PACKS!!

Games Pack ONLY £19.95 + P & P

This pack includes all the PC games reviewed here as well as many others!! There are 140 of them!! They include Blockout, Dark Ages, Popcorn, Round 42, Bushido, Jigsaw, Bouncing Babies, 10 Pin Bowling, Monopoly, Dominoes, Astro Goose, Frogger, Slot Machine, Connect 4, Alley Cats, Tennis, Football Coach, Bruce Lee, Clon Invaders, Arkanoid etc etc... too many to mention in this advert !!!

Windows Pack ONLY £19.95 + P&P

Have you got Windows 3 or 2 ??? Well we have made this pack up just for all you GUI fans. It contains loads of backdrops, 3D Buttons, Games, TSR's, Graphic Converters, Laser Printer Drivers, Desktop Managers, a File Finder, Icon editor, Screen Peace, Phone Book and Dialer plus many other programs and utilities to enhance your GUI.

Business Pack ONLY £19.95 + P & P

This package includes all the software you need for a small - medium sized business from a menu system through to a security system. The package includes Page Financial Controller, AsEasyAs, Droege CAD, Prooomm Plus, Freeway Payroll, Mindreader, File Express, Virus Scanners to name but a few of the programs included in this pack.

Selection Pack ONLY £19.95 + P&P

This is a general selection of programs carefully put together to get the most from your PC. The package includes French & Spanish tutors, Qedit, Auto Backup, DanCAD 3D, City Desk (DTP), PC-Write, Protected Program Copiers II, Cashbook, Homebase, Poem Writer, Ms-Dos Tutor, Mouse Manager plus many more programs included in the pack. 66 in all!!

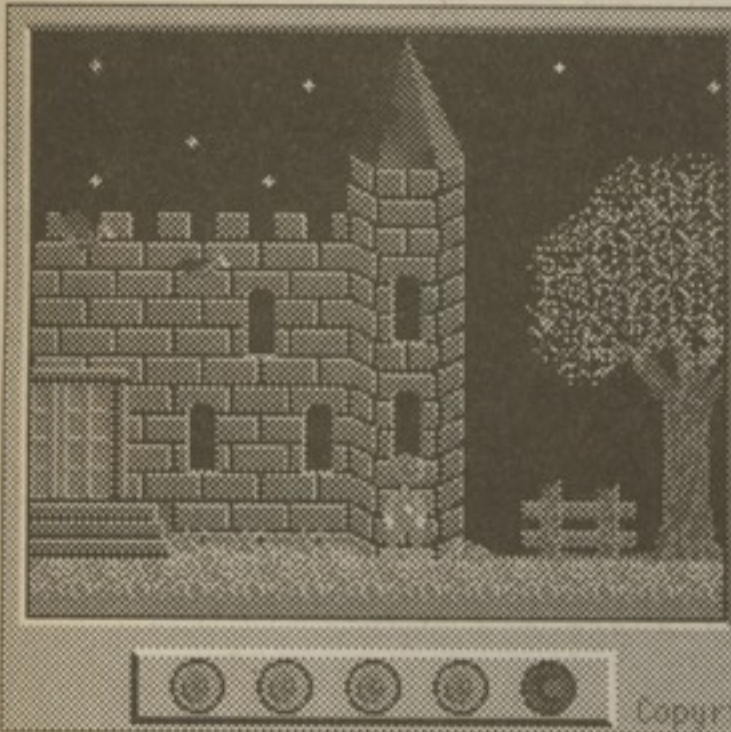
Benetech Systems
Dept FUT3
21 Loughborough Road
Leicester
LE4 5LJ



TEL 0533 611231 10.00am - 5.30pm Mon-Sat

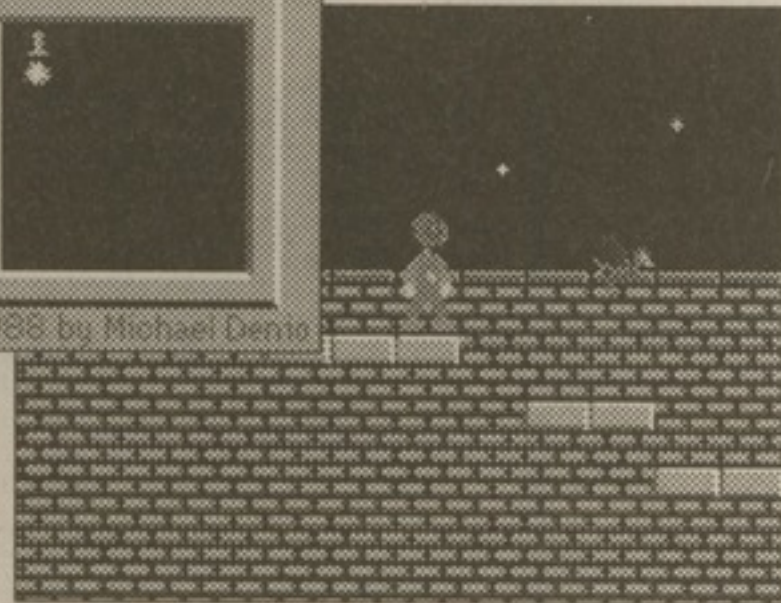
Postage & Packing £2.50 for above Shareware Packs.

We have over 10,000 programs available at £2.49 per disk Inc P & P. Shareware programs require separate payment to the author if found useful.



Copyright 1988 by Michael Denton

• The chimp-like Captain Comic's acrobatic skills enable him to leap chasms and vault platforms with ease.



such a high rank is a bit of a mystery. Still, a captain he is and a bit of an adventurer too. **Captain Comic** has to negotiate a series of levels, leaping chasms and vaulting platforms. He's a fairly acrobatic sort of a chimp and can leap fairly tremendous distances.

The distance he jumps is decided by the length of time you hold down the jump button. A long press causes a jump of Herculean proportions, while a short tap is more of a skip than a jump.

Along the way, you will be accosted by all manner of baddies. The most common enemy is a small harmless looking bird. These come alone or in flocks. They swoop and dive, all aiming for your tender head. Contact with one of these birds means a drop in energy for **Captain Comic** and should be avoided at all costs.

You can replenish energy at various intervals and a useful shield add-on is to be found on later levels. The graphics

are pretty, very colourful and well designed. The jerky scrolling lets things down a little, but what can you expect from a PC? Sound is sweet and takes some advantage of the PC's internal speaker. **Captain Comic** is good, but not nearly as good as...

3D PACMAN!

You'll never guess what this game is! Oh, you did. Oh dear, you've spoiled the surprise. **3D Pacman** is exactly what it says it is. A 3D version of the classic maze munching beach ball game.

This game has been copied and redone more times than any other game in existence and now it finally appears on the PC. The object of the game (for those of you who have lived in Tibet for

the last 20 years) is to navigate a maze, eating dots and avoiding ghosts. This time, there's no birds-eye view of the proceedings, it's a three-dee extravaganza, so realistic you'd think you were that voracious yellow beach ball.

Being Pacman isn't all fun though. There's a lot of dots to be eaten. As you zoom through the maze (and in this version it's more of a maze than the original), you pick up dots. In your way are tons of very nasty and unpleasant ghosts. Contact with these geezers is fatal, so avoidance is the best policy.

They tend to creep up on you and you can get quite a fright when you turn a corner to find one in front of you. Power pills can be eaten, endowing you with the ability to eat the ghosts (very useful). You can turn the tables on them and chase them round the maze. It's all classic stuff and the new 3D perspective gives the tired old theme a shot in the rear. Highly recommended for big laffs.

PINBALL PLAYTIME

If your PC isn't all tired out after that lot, then it's time to dust off your platform shoes, get out your "Tommy" LP and groove along while you play **Pinball** on the PC. The clash of steel on steel. The ringing of bells and bonus multipliers, the thud of rubber on bearings, all of these are impossible to reproduce on a PC speaker, but you can do a lot with EGA graphics these days.

BUT WHERE DO ALL THESE GAMES COME FROM?

Benetech Systems
21 Loughborough Road,
Leicester LE4 5LJ
Tel: 0533 611231.

Amiganuts
169 Dale Valley Road, Hollybrook,
Southampton SO1 6QX.
Tel: 0703 785680.

Pinball is a rather natty version of the real thing. It takes the age-old birds eye perspective of the proceedings, looking down on the colourful table, complete with bumpers, flippers and of course a ball.

The graphics are very simple, colourful and attractive, but simple all the same. The real beauty of this incarnation, is the realistic ball movement. It's faultless. The ball slides around the computer generated table just like the real thing. The angles are right, the ricochets perfect, the game moves like a dream and you can develop some fairly sophisticated playing techniques.

Pinball is just one of many titles available from Benetech and it should be noted that they also do a fairly vast range of business and utilities software too. Groovy. ■



AMIGANUTS UNITED

169 DALE VALLEY ROAD, HOLLYBROOK, SOUTHAMPTON, SO1 6QX.

Tel enquiries: 0703 785680, Mail Order only.

DISTRIBUTORS OF THE FANTASTIC AMIGA CODERS CLUB DISKS

EUROPEAN DISTRIBUTOR FOR THE WORLD FAMOUS T. BAG DISKS FROM MERLIN SOFTWARE

1036: Amibase Professional II (v.1.2). The new additions to this database make it a must have. It includes a nice picture addition facility. (1Mb)£3.50

877: 1 Across 2 Down. A fully fledged crossword program. (Data disk No: 1 is supplied free!), for only £5.00. Data disks 2, 3 and 4 are now ready at £2.00 each.

1068: MOD Processor v1.92. make picture and/or music progs, adjust pic height/width. This version will load the new 8 channel octamed music and is excellent!..£3.50

1075: Intuimenu. The easiest way to run all your programs, the editing feature allows you to set up all your progs to execute at the click of your mouse.....£3.00

NO MORE WAITING! SUBSCRIBE TO THE WORLD FAMOUS AMIGA CODERS CLUB NOW!

SEE OUR AD IN THIS WEEK'S SUPPLEMENT FOR FURTHER DETAILS.

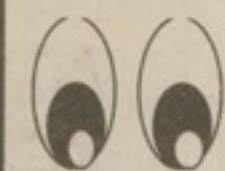
Leclercq Xavier's MASTER VIRUS KILLER V2.2 IS HERE!

This program is a 'must have' if you want to ensure that your collection is protected against all the latest and most harmful Virii around today.

Mike Simpson's A-GENE. The full two disk version of this excellent program is now available only from Amiganuts. If you have tried the single disk demo versions that are available in the Public Domain and were impressed, you will want this!

SEE OUR AD IN THIS WEEKS SUPPLEMENT FOR PRICE OF A-GENE AND MASTER VIRUS KILLER!

PLEASE NOTE THAT ALL PROGRAMS LISTED ABOVE ARE NOT PUBLIC DOMAIN



LOOK

THE FANTASTIC (1Mb) EIGHT OR FOUR CHANNEL MIDI COMPATIBLE OctaMED v1

Don't waste your hard earned money on the public domain v3.11 of Med! OctaMED includes this program and you can switch from 8 to 4 channels at will.

Only £10.00, (£15.00 for non-European). This includes return post and packing. Payment in pounds sterling only. If ordering from overseas, send a bankers order/Eurocheque etc. (Credit card orders will not be accepted)

Into coding? - Want to learn? The Amiga Coders Club is for you! ACC 1-4 is the first four compressed issues of an excellent series for coders, even if you are new to the Amiga. If you want to learn Assembly, using DevPac, (or our own new ACC special assembler disk), this is the club for you! ACC 1-4 (compressed) £1.50. The Amiga Coders Club disks are packed with source, hints, tips, advice from many of the well known coders that are on the Amiga scene today. Issue numbers 5-14 are now available. Please note, (excluding the compressed introductory disk (ACC 1-4), and no. 12, the price for each issue of the ACC disks is only £3.00. ACC 12 is our birthday issue, it is a 2 disk set, and therefore the price is £6.00. Amiga Coders Club Special! Here is a low priced assembler package for all you coders out there in Amigaland. (Given a good review in Amiga Format) £5.00.

The EVENT HORIZON

Who's doing what, with what, with whom, how, why and where...

THE PLACES TO BE...

Making the Difference

Now - Tue 31 Dec
The Science Museum, Kensington,
London. For further information tel: 071-938 8080.

GeoCon '91 Sun 11 - Tue 13 August
Info: 010 32 03 234 3180.

Human Gene Mapping International
Workshop Mon 19 - Thu 22 August
New Connaught Rooms, London. Info: 071-269 3616.

Computer Animation Competition and
Exhibition Wed 21 - Wed 28 August
The Amiga Centre Scotland. Info: 031-557 4242.

PLASA Light & Sound Show
Sun 8 - Wed 11 Sept
Olympia 2, Earls Court, London. Info: 071-370 8174.

Leeds Computer Extravaganza

Fri 13 - Sun 15 Sept
The New Exhibition Centre, Leeds
University. Info: (0532) 677 657.

CP/M & MSDOS Users' Group

Sat 14 Sept
The Spring Lodge Community Centre in
Witham. Info: (0376) 517496.

Business Computing '91

Tue 17 - Fri 20 Sept
Earls Court Exhibition Centre, London.
Info: 071-486 1951.

International Police Exhibition and
Conference '91 Tue 17 - Thu 19 Sept
Barbican Centre. Info: 081-995 7700.

The Works of Charles Babbage

Thu 19 Sept
Lecture at the King Edward VI College,
Totnes at 14.15. Info: (0803) 863821.

Effective Management of Information Technology Security Conference

Mon 7 - Tue 8 Oct
The Forte Crest Regents Park Hotel,
London. Info: 071-587 1117.

Computers Count Tue 8 - Thu 10 Oct
Totnes Civic Hall. Info: (0803) 863821.

Business Communications Awards

Thu 10 October
The Savoy Hotel. Info: 0800 800 847.

Charles Babbage's Impact on Modern Computing

Wed 23 Oct
The Science Museum, Kensington,
London at 17.30. Info: 071-938 8196.

Image Processing '91

Tue 29 - Thu 31 Oct
At Birmingham NEC. Info: 081-868 4466.

System Builder Wed 30 - Thu 31 Oct
Sandown Exhibition Centre, Esher,
Surrey. Info: (0822) 614671.

Computer Graphics '91

Tue 5 - Thu 7 Nov
Alexandra Place, London. Info: 081-868
9933.

Desktop Cad '91 Tue 5 - Thu 7 Nov
As above.

Open Systems '91 Wed 6 - Fri 8 Nov
Olympia, London. Info: (0784) 472200.

All Micro Show and Radio Rally

Sat 9 Nov
Bingley Hall, Stafford. Info: (0473)
272002. ■

Golden Moments

A look back into the history of
computing with *Express*. If it
happened we reported it first.

ONE YEAR AGO

● After a brand new sports car
slammed into the back of their patrol
car and shunted it 134 feet, the police
got out to investigate. What they found
was a drunken driver and a resilient
talking car computer, still pleading,
'Slow down! Slow down!'. If you're
looking for a best friend, forget
computers, stick with dogs.

● The fastest ever (at the time, at least)
PC was launched by Compaq, running
a 486 processor at 33MHz. At £8,000, it
immediately fell into competition with
Sun's similarly priced, newly released
bottom of the range SPARC station.

TWO YEARS AGO

● A particularly vicious virus was
discovered, which would only infect
PCs running dBase. All files saved by
the user would seem to be stored as
normal, but were in fact being collected
by the virus. Only when the virus was
discovered and removed would the
damage be done: it would take all of
these files with it. If, on the other hand,
the virus was left alone, it would wait
for 90 days before wiping the hard disk.

● Developers writing for the Lynx,
Atari's hand-held games console, were
given Amigas to aid software
development. Could this have been
because the Amiga is a better machine
than an Atari for development
purposes, or was it simply a goodwill
gesture from Atari to Commodore?

● Speaking at an international hacking
conference, a West German hacker
explained why he had sold secrets from
Western defence computers to the
KGB. Apparently, it had nothing to do
with politics, but was motivated by
'technical fascination'. Wau Holland,
the prominent hacker, admonished
him for a breach of hacker ethics.
The West German intelligence
authorities were also keen to give
him a good admonishing...

The Insider...

Famous industry figures beware -
wherever you are and whatever
you're saying, The Insider will be
listening in...

The Insider wishes to let you into a secret
- it's no fun being a scandal-collector you
know. All this cloak and dagger stuff is
wearing on the soul, and the bank
balance. Basically, mongering scandal is
a nasty process, but it's addictive as hell.
By the way, if you have any Insider-like
info on famous computer industry
figures, then send it to: The Insider, *New
Computer Express*, 30 Monmouth Street,
Bath BA1 2BW. A fiver will go to anyone
lucky enough to get an item printed.
Anonymity is assured.

TALKING OF WHICH

The people we really want to hear from
are not those with grudges to bear
against employers or ex-employers. We
want to hear from those upstanding folk
who work with computers every day and
get to hear about things which are
normally held back from the public. Info

relating to bugged software being
released deliberately (it has happened
and the people responsible know who
they are), dodgy business deals which
see money passing from account to
account when it shouldn't be... you know
the kind of stuff. Keep us in touch. Hey!
let's keep computing honest.

THAT'S OUTRAGEOUS

The *Express* look at the nastier side of
cute, fluffy and non-profit making PD has
caused a bit of an uproar among the PD
librarians and sysops. It appears that Ray
Burt-Frost of Amiganuts is not the the
most popular fellow among his peers.

Express hacks have been inundated
with calls from PD-people around the
country complaining that their firms were
not mentioned and that Ray Burt has
been running his operation in an
aggressive manner, edging out other

firms and such like. We cannot
substantiate any of this and would not
condone or otherwise any such
statements. All The Insider has to say is,
if you have any beefs, then send them in
pronto. It all needs to be out in the open.

DON'T TOUCH THAT DISK!

This is a genuine public warning in the
best sense of the phrase... If you are
considering the purchase of the latest
edition of *CU Amiga*, beware, the cover
disk apparently contains a virus. The
Insider was going to check this claim out
on one of the many machines which litter
the office, until a rather worried looking
tech-person leapt on the back of the old
purple velvet smoking jacket, ruffled the
designer silk shirt and screamed: "What
the blue blazers, the freaking, crashing,
flaming heck do you think you are
doing?" These techies get so wound up.



Due to further expansion of our Sheffield offices, a number of vacancies have now arisen.

PRODUCER

If you have the ability to manage a game from conception through to completion, then this vacancy could suit you. Ideally you will have an understanding of programming, a sound knowledge of game structure and the ability to communicate with individuals and teams of programmers. Salary and benefits will be commensurate to experience. A current full driving licence is essential. Help will be given should the successful applicant need to re-locate.

PROGRAMMERS / ARTISTS

We require creative programmers and artists to work on 6502, Z80, 68000 and 8086 platforms. The variety of work ranges from Gameboy through to CD based projects. A proven track record is helpful but not essential as all applicants will be judged on ability. Salary and benefits will be commensurate to experience. Help will be given should the successful applicants need to relocate.

FREELANCE

In addition to our internal programming teams we are always looking to take on any freelance projects from external teams who have a proven track record. Demos and storyboards are always assessed.

All enquiries will be treated in the **strictest confidence**. Contact James North-Hearn or Sean Kelly on 0742 753423 or write to Gremlin Graphics, Carver House, 2-4 Carver Street, Sheffield, S1 4FS.

WORKING CAN BE FUN... SERIOUSLY

U.S. Gold, Europe's No.1 Computer Leisure Software Publisher, urgently wishes to fill the following posts:-

Testing Supervisor

To be responsible for the supervising of testing personnel and the overall monitoring/schedule of the testing and other aspects of the department. Applicants should have a basic knowledge of computers and software and must be able to organise staff and prepare formal reports. A driving licence is essential as a good deal of travelling will be involved. Attractive salary and excellent overtime opportunities. Ideal candidate age: 25+

Games Testers

To test/evaluate computer games on all common computers and cartridge machines. Applicant must have a good background knowledge of computer and cartridge software and must be able to work individually or as part of a team. Applicant would be willing to travel and work overtime at short notice. Attractive salary and excellent overtime opportunities. Ideal candidate age: 17+

Helpline Operator

To operate and set up telephone helplines to provide general information and help to the public. A basic knowledge of computers/software/gameplaying is required along with an excellent telephone manner and lots of patience. The applicant should preferably have a driving license and must be willing to deal with a variety of customer queries. Attractive salary and overtime opportunities. Ideal candidate age: 20+

All candidates should be of high calibre and able to demonstrate knowledge and enthusiasm for the computer games industry. Write, enclosing full CV to Tony Porter, U.S. Gold Ltd., Units 2/3, Holford, Birmingham B6 7AX.



Europe's Leading Development House

Images Software has superb opportunities for talented freelance Programmers and Artists in console and computer games development. Due to our continuing success in development for major US and UK games publishers Images Software is now looking for new talent to join the team.

We will be placing a whole series of multi-format conversion and licensed projects in the next few weeks with freelancers like yourself. If you have a good track record and are looking to 'trade up' to a better development company then call, write or fax for more information:

Karl Jeffery

**Director, Images Software Ltd,
Solent House, 183 West Street,
Fareham, Hampshire. PO16 0EF**

Tel: (0329) 822672

Fax: (0329) 822786

ARE YOU GOING TO BE A COMPUTER OPERATOR ALL YOUR LIFE?

With Computeach, there is a way out. Working in computers, you're already one step ahead. Now, simply by devoting some of your spare time to home study, you could be on your way to a valuable National Vocational Qualification in programming, analysis or any of the many other well-paid jobs available. You may even qualify for a Government loan.

Send for your free Career Development Pack now, you don't even need a stamp, or call us on 0384 459521.

Please send me my free Career Development Pack NCE 08/08/V

Mr/Mrs/Miss/Ms _____


Tel: _____ (day) _____ (evening)

Age _____ Occupation _____

Address _____

Post Code _____

Send to: Computeach International, FREEPOST, P.O. Box 51, Dudley, West Midlands DY3 2BR. Telephone: 0384 459521.

Computeach 
International

DO YOU WANT TO BECOME A PROGRAMMER?



Established 1968

Move across to the rewarding world of IT

We have a series of short and long term training programmes in Computing and Information Processing.

- * C & G 424/425 Certificate in applications programming.
- * C & G 418 Computer Programming & Information Processing.
- * Evening courses in DBASE, WP, Spreadsheet Analysis.
- * Evening courses in Pascal, BASIC & COBOL.

**Contact Central London College on
071-580 4596.**

TRAINING FOR YOUR FUTURE

not just for beginners...

With its user-friendly question and answer approach, PC Answers doesn't just give you the technical data on a piece of hardware or software; it gives you the real benefits and drawbacks. And further still, it makes you ask yourself some very pertinent questions: "What exactly do I want to achieve? Do I really need this equipment? Is there an alternative more suited to my needs?"

PC Answers then provides the expert advice and purchasing guidance so you can buy with complete confidence *and* get the best bargains.

Every issue carries in-depth sections on technical problems plus all the major applications – Windows, databases, word processors, spreadsheets.

for all PC users

PC ANSWERS:

easy-to-follow product ratings –
with all best buys clearly identified

PC ANSWERS:

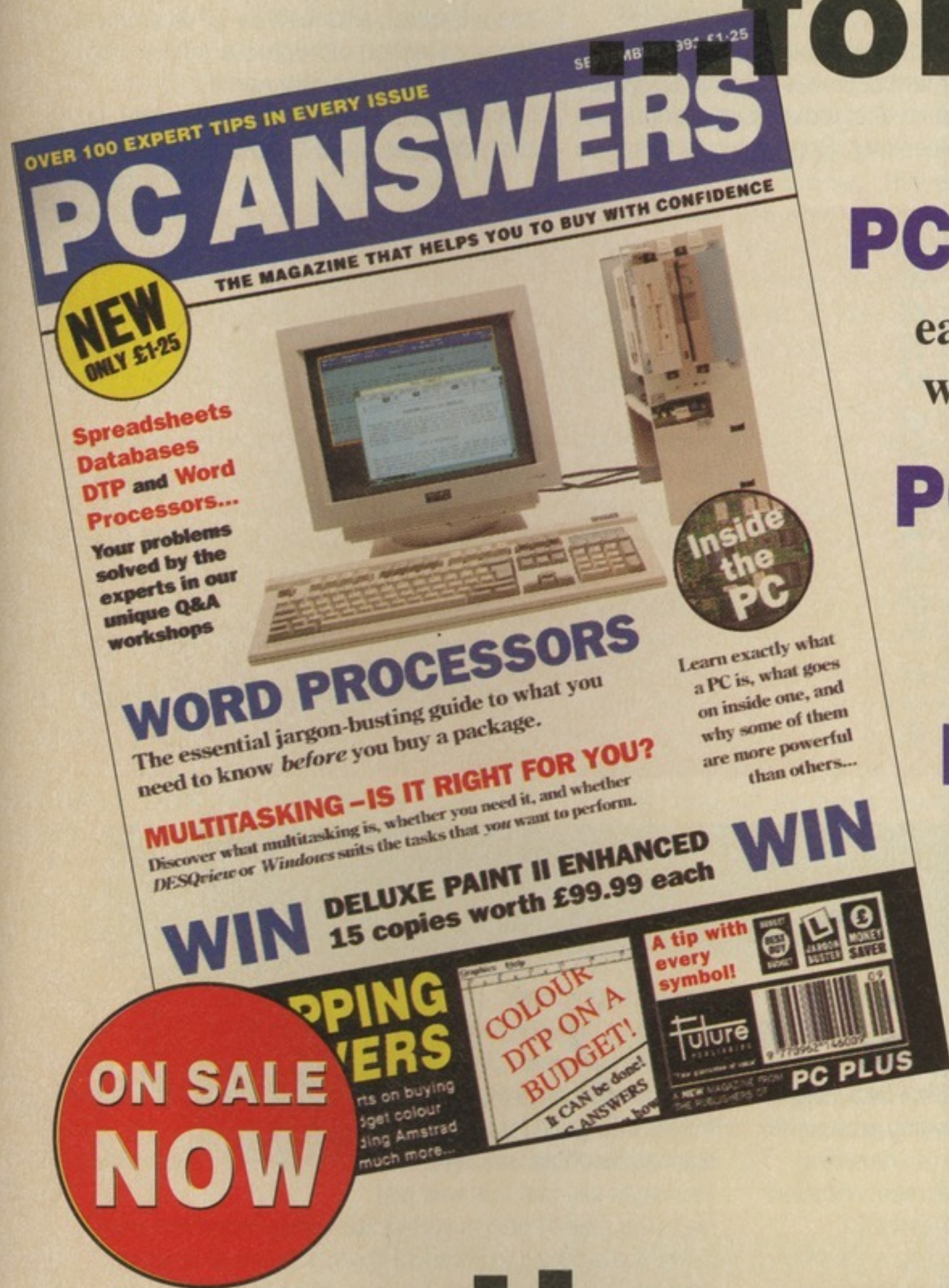
pin-pointed tips –
highlighting where you can save time and money

PC ANSWERS:

beginners' boxes and jargon-busting panels –
to help you get to the facts

PC ANSWERS:

**the magazine with
over 100 expert tips in
every issue**





Games Week

Stuart Campbell guides you through the summer games releases, gets you into the movies and keeps you in touch with the top 20 charts

STAR RATINGS

- ★★★★★ = EastEnders
- ★★★★ = Coronation Street
- ★★★ = Home and Away
- ★★ = Emmerdale
- ★ = Neighbours

RIGHT TO REPLY

Phew! Our postman has had to take a holiday after struggling to cope with the weight of the letter that flooded in in response to my sulky old rant at ELSPA a couple of weeks ago on the subject of mixed-price charts. The letter was from none other than Roger Bennett, General Secretary of ELSPA, himself, and went like this:

"ORDERS FROM GESTAPO
HEADQUARTERS
Hello Stuart.

Today I am wearing my little black moustache, a black wig, and can be heard clicking my heels and shouting 'Heil ELSPA!'

I am sure you are sufficiently endowed with humility to be prepared to listen to the arguments for amending the charts which seem to have upset you so. I recall that you were a rational man (*don't know where he got that idea from - Stuart*) and that you would wish to hear both sides of an argument before taking a stance.

I can certainly take on board your argument on having charts based purely on sales but I am sure you will equally agree that comparisons should be based on a like-for-like basis. For example, the record industry does not have LPs in the CD chart or 45s in the LP chart.

It is apparent that ST owners are not really interested in Amiga, PC, or any other format charts. The same goes for owners of all other machines.

Additionally, the growth in specific

format magazines requires specific charts based on full price and budget prices. I hope that you will bear in mind that the costs of producing the charts are borne by ELSPA members and the information they require has significant influence on how the charts appear. A weekly bound report called 'Chartalk' with 24 charts listed is distributed to Companies which make additional subscriptions for obtaining it. This contributes substantially towards paying what is virtually a six figure sum for the annual contract to Gallup for collecting the data and producing the chart.

While it would appear that you would prefer a totally unstructured arrangement for the computer entertainment business, I would suggest that some level of industry regulation is ideally necessary. Software publishers

can then perhaps continue to develop entertainment software based on achieving a level of profitability for re-investment in new, good quality product so that you have something to write about, consumers have something worthwhile to buy, and magazine publishers can continue to employ Stuart Campbell. Long may it continue."

Well, at least he's got a sense of humour. But let's take a look at the arguments. The LPs and 45s one is, I'm afraid, nonsense. LPs and singles are inherently different products, a single is just as its name suggests, one song (OK and a B-side), whereas an LP is a much larger collection of separate tracks. The obvious parallel is with game compilations, but ELSPA's full-price chart includes compilations alongside



SCOOBY DOO AND SCRAPPY DOO

• Hi-Tec • Spectrum

If you're stuck on this rather spiffy little platformer, fret no longer. When you're on the title screen, simply hold down the letters H, E, L and P. The border should go white, and you'll have infinite Scrappies. Whether this is a good thing or not, you'll have to decide for yourself.

TOP 10

ALL FORMATS CHART

THIS WEEK	LAST WEEK	TITLE	PUBLISHER	MACHINE
1	1	Man Utd Europe	Krisalis	SP CO AM ST AG
2	27	Hero Quest	Gremlin	SP CO AM ST AG
3	7	Dizzy Collection	Code Masters	SP CO AM
4	6	Teenage Mutant	Mirrorsoft	SP CO AM ST AG OT
5	9	Lemmings	Psygnosis	SP CO AM
6	10	PGA Tour Golf	Electronic Arts	AG OT
7	5	Monkey Island	US Gold	ST AG OT
8	19	Eye of the Beholder	US Gold	AG OT
9	12	Viz	Virgin	SP CO AM ST AG
10	11	Big Box	Beau Jolly	SP CO AM ST AG

ST = Atari ST AG = Commodore Amiga PC = IBM PC or compatible SP = Spectrum
CO = Commodore 64 AM = Amstrad OT = Other.
Chart compiled by Gallup. © European Leisure Software Publishers Assoc.

ARMALYTE

Thalamus • Amiga • £25.99 • ★★

This is a re-write of a popular C64 shoot-'em-up from a few years back, and has been programmed by Arc Developments, last seen coding the phenomenal *R-Type II* for Activision, so when it came into the office I had high hopes of a top-notch blasting experience.

First impressions seemed to confirm this, with big, lush graphics zipping smoothly around to the accompaniment of a tasteful soundtrack and some great zappy effects, but within minutes things started to take on a different complexion as it all went horribly wrong, in more ways than one. Initially, it went horribly wrong for my little spaceship, as it met a bloody death several

times in quick succession at the hands of the game's tough aliens and cramped landscapes, but then everything began to fall apart for the programmers too.

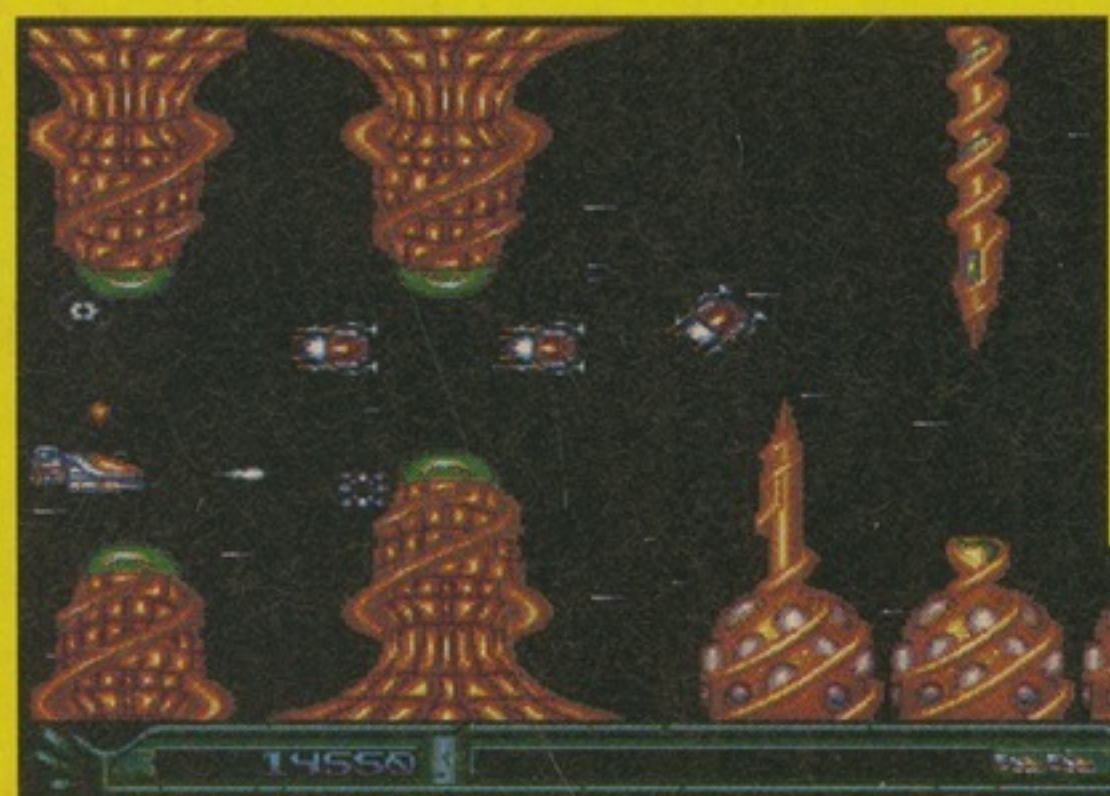
After losing my three lives (which didn't take long at all), the game insisted on keeping me hanging around for 50 seconds while it ran through a couple of unexciting animated sequences, displayed the title screen, reloaded the first level, etc. Since my game hadn't lasted 50 seconds in the first place, this was more than a little bit frustrating and there was no way of skipping the delay.

With every passing game the wait became more and

more irritating, and eventually the disk found itself ripped from the disk drive and hurled with great force against the office wall. Now you might say that this was just me being crap at games and/or incredibly impatient, but I spent hours trying to make a decent amount of headway through *Armalyte* without success. It's a tough enough game at the best of times, but when you lose a life you lose all your power-ups (in time-honoured fashion), and taking on the subsequent attack waves without them calls for more skill than even an ex-European video games champion like myself can muster.

It gets even worse when you realise that at least 50 per cent of the dangerous situations in the game are of the type where you don't see them coming, and if you're not in the right place when they appear you're a dead man. In fact, this game reminded me of nothing so much as *Rick Dangerous*, which used a similarly unfair way of impeding your progress.

Armalyte is the kind of game which will suit incredibly talented zappers on the lookout for a stern test of memory, and who don't mind putting up with some decidedly iffy collision detection and samey landscapes while they're about it, but nobody else is going to care for it all that much.



• If you think that this doesn't look all that tough really, then why don't you give it a try, pal? *Armalyte* is a game for which only the most hardened alien-butcher need apply.

TOP 10 ALL-FORMAT BUDGET		THIS WEEK	LAST WEEK	TITLE	PUBLISHER	MACHINE
		1	1	Bubble Bobble	Hit Squad	SP CO AM ST AG OT
2	NE	Shinobi	Mastertronic	SP CO AM ST AG OT		
3	7	Dragon Ninja	Hit Squad	SP CO AM ST AG		
4	6	Double Dragon	Mastertronic	SP CO AM ST AG OT		
5	3	Magic Land Dizzy	Code Masters	SP CO AM		
6	9	Fantasy World Dizzy	Code Masters	SP CO AM ST AG		
7	10	Multimixx 1 Golf	Kixx	SP CO AM		
8	12	Pro Footballer	U&H Games	SP CO AM		
9	15	Quattro Cartoon	Code Masters	SP CO AM		
10	13	Dizzy Panic	Code Masters	SP AM		

ST = Atari ST AG = Commodore Amiga PC = IBM PC or compatible SP = Spectrum
CO = Commodore 64 AM = Amstrad OT = Other.
Chart compiled by Gallup. © European Leisure Software Publishers Assoc.

individual games without distinction. There aren't different charts for ordinary LPs and double LPs either, so dividing things purely by price is clearly an artificial imposition.

As for the point about machine-specific charts, I'm a bit confused. This is a multi-format magazine, and I personally believe (backed up by other correspondents) that ST owners or whoever ARE interested in a general chart, so long as it's in their machine's field (ie, 16-bit or 8-bit).

To ELSPA members, the question has to be "What information can you get from price-separated charts that you couldn't get from an all-in-one chart?" Mixed-price charts give you more information, not less.

And finally, no I wouldn't prefer a 'totally unstructured arrangement'. There's no point in comparing 16-bit sales with 8-bit ones, but it's quite definitely interesting to see whether *F-15 Strike Eagle II* on the ST and Amiga is outselling *Little Puff In Dragonland* on the ST and Amiga, despite costing £32 more. Quite where all this ties in with software houses making bigger or smaller profits is beyond me. Please Roger, give us back our charts.

HERE IT COMES AGAIN

This week movie games:

PLATOON • The Hit Squad • £3.99 for 8-bits and £7.99 for 16-bits •

Platoon was a game from the old school of movie licences – pull a few critical points of the film and make little sub-games out of them, then jam the whole lot together to make, hopefully, one decent whole game. It was an approach that led to a fair few inglorious failures, but this was one of the triumphs.

Where *Platoon* succeeded was in capturing the tension and atmosphere of



• Get funky with Platoon.

the movie, and making all of the games capable of standing up for themselves to at least some degree. Players found themselves creeping around, lost in dense jungle and jumping at the slightest sound, and suffering moments of heart-stopping fright as a Viet Cong guerrilla leapt up right in front of their face from out of nowhere.

The game itself was well-designed and gripping, and still ranks right up there with *Batman* and *The Untouchables* as one of the very best movie licences ever. ★ ★ ★ ★

MOONWALKER • Kixx • £7.99 •

Is there any more that needs to be said about *Moonwalker*? If *Platoon* was the right way to go about a movie conversion, *Moonwalker* was surely an object lesson in how it could all go appallingly wrong. And yet the basic premise is the same, important moments of the movie turned into sub-games, so why was, and is, *Moonwalker* so unfailingly dreadful? The simple answer is that while the concept was sound, the execution (the sub-games themselves) was shocking.

Moonwalker brought to the fore some of the worst game design by a live person in the history of mankind, coupled with – on the Amiga version only, fortunately for ST owners – technical



• Moonwalker - it's...not very good, actually.

ineptitude of the highest order. The looped sample of Michael Jackson's 'Bad' which continuously accompanied the game was so atrociously done that the amount of time anyone could bear it for before switching the sound, or more commonly their computer, off altogether roughly equated to how long it took them to stop laughing, pick themselves up off the floor, and wipe the tears from their eyes.

ST owners were luckier, they only had to suffer the unbearably tedious gameplay, but really, there isn't a game-splayer alive who should be made to go through playing this for love nor money. And I should know. ★

RED HEAT • The Hit Squad • £3.99 for 8-bits and £7.99 for 16-bits •

OK, trivia fans, here's a question for you. What have Michael Jackson and Arnold Schwarzenegger got in common? Well, not much, but there is one thing binding these two media titans together – they've both been the subject of truly dire computer games. What must surely be the nadir of Arnie's entire career (yes, even lower than starring in *The Jayne Mansfield Story*) came courtesy of this game, a software atrocity that's not so much red hot as head rot. It featured a 'Cinemascope'-type wide screen, bordered by huge expanses of black nothingness, a phrase which



• Big Arnie recoils in heterosexual horror as a chum expresses an honest opinion of Red Heat

also serves to describe the state of mind of whoever had the downright cruelty to design the gameplay.

Arnie lumbers slowly along the screen, punching out an endless line of bad guys and occasionally coming a cropper to one of the many random hazards that pop up now and again from out of nowhere, giving him no time to react to them even if he was still awake (which is more than could likely be said for the unfortunate player any time after two minutes into the game). A couple of banal sub-games add no interest whatsoever and the only truly remarkable feature is the breathtakingly bad (no, really, you wouldn't believe it) animation on the between-levels intro screens, which is at least good for a laugh. Which is all Ocean deserves for asking people to fork out for this disaster for a second time. If you buy it, I'll be back... ★

MOVIE GAME COMPETITION!

Yes, you could win some top movie-game-type prizes if you're the first person to have the postcard pulled from the hat of cards containing the correct answer to the following movie-type question:

What do the films *Tron*, *The Battleship Potemkin*, and *The Best Little Whorehouse In Texas* have in common?

Answers to 'I Want To Win 50 Games', at the usual Express address.

HATSTAND CORNER

While taking a short holiday back in bonnie Scotland (home of clean air, decent water, real beer and chips with nippy sauce) this week, I happened across something which made my old heart do a double-take. Nestling in the corner of an Edinburgh arcade, what should I spy but a *Space Invaders* machine. 'Nothing abnormal about that', I hear you venture, but this wasn't any old *Space Invaders* machine. Oh no, this was a Prize *Space Invaders* machine. Yep, in a similar vein to the old cash-prize *Tetris* machines that came out a while ago, you can now play *Space Invaders* for money.

You only get one life, you lose all your points if you miss a Mystery Ship, and the invaders themselves act in some strange ways (although if you ever played the rare first arcade sequel, *Space Invaders Part II* or *Deluxe*, you'll know what to expect), but those old monochrome graphics and that old compulsive gameplay are back, as if they'd never been away.

The 50p-a-game price tag might jolt a few veterans a bit, but with a maximum of £20 up for grabs, you can't really complain (and you can always have a game with no prizes for 30p). Conclusive proof, I think you'll agree, that the world has finally gone completely insane...

BEG, BORROW AND BURN

Unfortunately, we seem to have reached the lowest point of the software industry's summer recess, so that new games are incredibly thin on the ground. With that in mind, it's maybe a better idea to save your money and head off to Blackpool for a week, but if you really must buy a game...

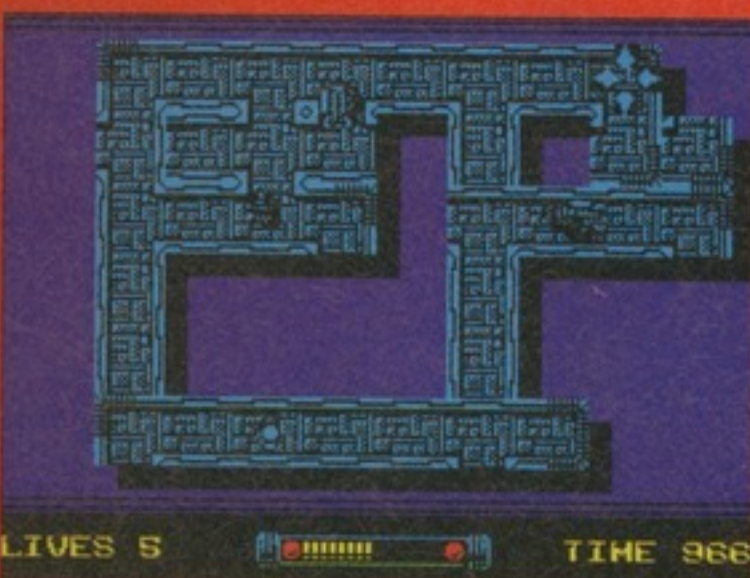
BEG

F-15 Strike Eagle II • MicroProse • £39.99 for Amiga

Finally out, it's the latest in a long line of definitive action flight sims from Wild Bill and the boys. It won't be the game to convert you, but if you're a fan it's a stunner, and it's accessible too.

BORROW

Insector Hecti In The Interchange • Hi-Tec • £2.99 for Spectrum



• What's going on here? I'm not sure, but it's jolly good

This curious little maze puzzle game suffers a little from that old Speccy bugbear of unclear monochrome graphics, but it's inventive and addictive, and for three quid that can't be altogether bad, now can it?

BURN

Burn something? In this heat? Are you kidding? Don't you think the ozone layer's in a big enough mess right now? Besides, when software's this hard to come by, beggars can't be choosers. If you see a new game, buy it. (Er, but don't blame me if it's crap...)



COMPUTER REPAIRS AND UPGRADES

VISA

● COMMODORE ● ATARI ● AMSTRAD ● SINCLAIR ● IBM ●

- Commodore registered, Amstrad authorised
- Fixed prices on many machines.
- Most computers should be repaired 24hrs from booking in
- Over 3500 square foot engineering complex at your disposal
- First class technical advice available from over 20 technicians/engineers

Amiga 500.....	£44.95	→ (£25 additional premium if disk drive unit or keyboard are not repairable and require complete replacement)
Atari 520 STFM.....	£15.00	→ Diagnostic fee plus quote (Typically £45.00)
Commodore 64.....	£29.00	
Spectrum 48K.....	£21.00	
Spectrum +2.....	£29.00	
Spectrum +3.....	£35.00	
Spectrum 128K.....	£24.00	
Amstrad 464.....	£32.00	
Amstrad 6128.....	£36.00	
IBM/Clone.....	P.O.A.	
Other Machines.....	P.O.A.	

PREMIUM SERVICE

To utilise our premium service simply send or hand deliver your machine to our workshop address below, enclosing a fault description and daytime telephone number plus payment, and we will do the rest. Please add £5.00 if you require 24hr to your door courier or else contract parcel post will be used.

(W.T.S. reserve the right to refuse machines which are in our opinion beyond economic repair - Handling charge may be applicable)

TEL: 0582 491949 (4 lines)

W.T.S. ELECTRONICS LTD, Chaul End Lane, Luton, Beds., LU4 8EZ.

DISCS



from

28p

LOCKABLE DISK BOXES

40 x 3.5	-	£3.99
50 x 5.25	-	£4.29
80 x 3.5	-	£4.49
100 x 5.25	-	£4.99

3.5"
DSDD

25	9.99
50	18.99
100	32.99
250	76.99
500	148.99
1000	284.99

3.5"
SONY

25	12.99
50	23.99
100	43.99
250	107.99
500	199.99
1000	389.99

3.5"
DSHD

25	22.99
50	43.99
100	64.99
250	156.99
500	303.99
1000	599.99

5.25"
DSDD

25	7.99
50	13.99
100	22.99
250	55.99
500	109.99
1000	214.99

5.25"
DSHD

25	13.99
50	24.99
100	47.99
250	113.99
500	213.99
1000	399.99

DISCS

*our disks are fully guaranteed and come complete with labels or envelopes, labels and tabs.

ACCESSORIES - POST FREE!

Mouse Mat (Boxed).....	£2.99
Mouse Holder.....	£2.99
2 Piece Universal Printer Stand.....	£6.99
3.5" Disk Clean Kit.....	£2.99
5.25" Disk Clean Kit.....	£2.99
Roll of 1000 3.5" disk labels.....	£8.99
Printer Cable (1.5mtr).....	£3.99



**SNAP
COMPUTER
SUPPLIES LTD**

RIBBONS Post Free

TOP QUALITY COMPATIBLE BRANDS

Amstrad DMP2000/3000/3160	£2.80
Amstrad DMP4000	£4.90
Canon PW1080/Taxan Kaga	£3.30
Citizen 120D/LSP10	£3.90
Epson FX/MX/RX80	£3.40
Epson LX80/86	£2.80
Mannesmann Tally MT80	£4.80
Panasonic KXP 1080/81/82	£4.50
Panasonic KXP1124	£4.50
Star LC10 Mono	£2.80
Star LC10 4-colour	£5.90
Star LC24-10	£3.90

1 OFF	£2.80
3 OFF	£2.60
5 OFF	£2.40
10 OFF	£2.10
20 OFF	£1.80
30 OFF	£1.60
40 OFF	£1.40
50 OFF	£1.20
60 OFF	£1.00
70 OFF	£0.80
80 OFF	£0.60
90 OFF	£0.40
100 OFF	£0.20

1 OFF	£2.60
3 OFF	£2.40
5 OFF	£2.20
10 OFF	£1.90
20 OFF	£1.60
30 OFF	£1.40
40 OFF	£1.20
50 OFF	£1.00
60 OFF	£0.80
70 OFF	£0.60
80 OFF	£0.40
90 OFF	£0.20
100 OFF	£0.10

PAPER Top Quality

FANFOLD WITH MICRO-PERFS

11 x 9.5 60GSM	£7.99
11.66 x 9.25 (A4) 70GSM	£10.49
11.66 x 9.25 (A4) 80GSM	£11.99
11.66 x 9.25 (A4) 90GSM	£13.99

1000	£13.99
2000	£18.49
4000	£20.49
8000	£23.99

**SORRY! MAIL
ORDER ONLY**

ALL PRODUCTS SUBJECT
TO AVAILABILITY

ALL PRICES INCLUDE VAT.
PLEASE ADD £2.99 POSTAGE AND
PACKING FOR DISKS & BOXES £3.99
FOR PAPER E.O.E.



Hotline Number 0345 045 455

1st Floor, I-Mex Business Park, 42 Flaxley Road, Stechford, Birmingham B33 9HL

STARTALKER CALLING...

Voice mail, automatic calling and answering, and more. It's all supposed to be possible with Staria's StarTalker. Tim Howell looks at StarTalker and speculates on its possibilities

PRODUCT: StarTalker
COMPATIBILITY: PC
FROM: Staria Limited
CONTACT: 0202 813141

Computers today are capable of almost anything and while the average user might not be able to use some of the more specialised hardware available, sometimes it's worth looking at them anyway, just to see what they're capable of. We look at StarTalker, a device that enables a PC to act as a voice mail and message forwarding machine, amongst other things.

StarTalker is a half-sized card that slots into a PC expansion slot. The card comes packaged with a microphone, a small speaker, a telephone lead and two manuals. There is also a disk of software which shows you what the card can be used for.

It must be said that this software is only a basic demonstration of what StarTalker can do. Because the card is aimed at developers who will create their own software to use it, there are no really usable applications provided with the card. Therefore, it is not possible to test the card to any great extent; instead the package must be looked at in terms of what it could be used for.

IN PRACTICE

The card, once programmed, seems to work in practice. At one stage we phoned up manufacturer, Staria, for more information, but found the company was on holiday. Instead of having to talk to an answerphone, a computer equipped with StarTalker was put in charge.

A recorded human voice gave us two options: press '1' to talk to one person or '2' to talk to someone else. Because StarTalker can recognise tone signals from the telephone, it can direct the call to the relevant person, either via a telephone extension or by calling them at another location. We left a message, which the computer subsequently recorded. About 15 minutes later our call was returned – the computer had passed on our message to the home of the person we had tried to contact. This is an example of StarTalker in action.

While it is difficult to replicate such an arrangement, the card was installed to see what could be achieved. Fitting StarTalker involves taking off the PC's case and inserting the card in any one of the empty expansion slots. This is no problem – the card sits there with its various sockets exposed at the rear of the PC.

These sockets are for the card's microphone and speaker. A telephone cord also comes out of the card which can connect to the telephone system. And, if needed, a separate telephone can also be connected.

SOFTWARE OPTIONS

Software is provided on a single floppy disk. One file is an example of how, in simple terms, the card could be used. This program features a menu with options such as replaying messages and making calls.

Two other executable files are even less complex. One is for recording and storing messages through the microphone. The computer digitises the voice and saves the message to the hard disk, which can then be replayed by the program or to potential callers. The other program is dedicated to answering phone calls and storing the caller's messages, after playing the user's own message – like an answering machine.

Programming source code makes up the remainder of the disk. These are written in BASIC and C and are for the potential developers to see how programs can be created. The source files have comments dispersed amongst the code explaining what it does. In reality, these files are more important than the executable files included with the card as they demonstrate the principles behind programming it, which is what, presumably, whoever buys the card is going to do with it.

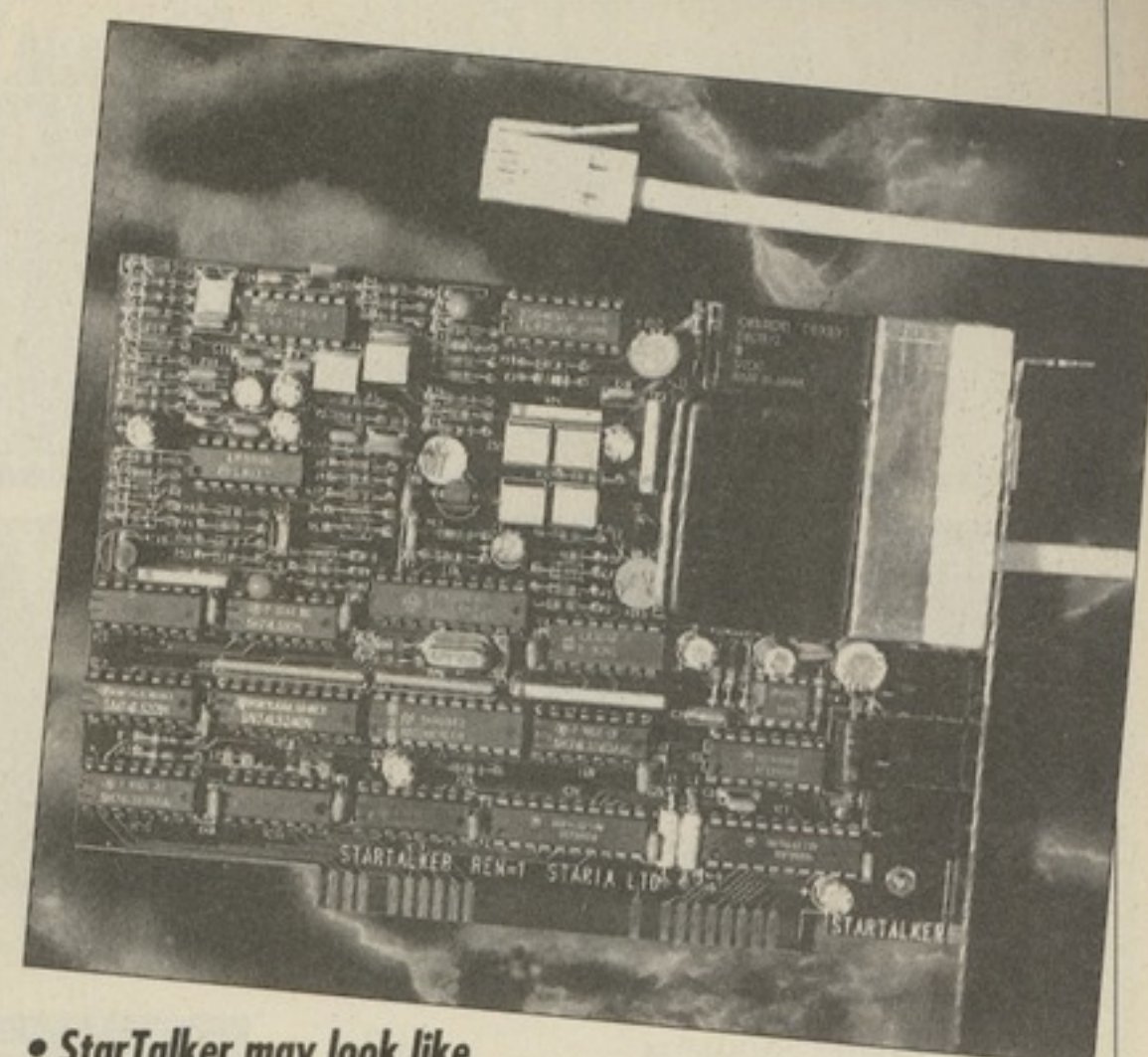


• No this isn't the latest mini version of a Karaoke machine – it's StarTalker's microphone and speaker!

READ ALL ABOUT IT?

The documentation for StarTalker comes in the form of two thin manuals. The first one explains what StarTalker is and how to use it; the second is about programming the card. The manuals are, in comparison other computer manuals, not very good. This is a classic case, it seems, of manuals being written by programmers for programmers, to the detriment of other people who have to read the 'techie' prose.

To be fair, developers would primarily be the ones reading these, but even so, they use very awkward English. The manuals don't actually say in definitive terms what the card does or what it is capable of, which makes it seem as if more than the software has to be left to the developer's imagination.



• StarTalker may look like just another PC card, but it's much more than that. By using it, your PC can answer your telephone calls, redirect those calls, and even make them. In theory a lot more is possible, but it has to be left up to the imagination of developers.

MORE THAN JUST A MESSENGER?

What can be seen from the review so far is that as the card stands, there is not much that can be immediately done with it, at least for a non-programmer. Consequently, some speculation is required as to what StarTalker is capable of, largely based on what Staria claims it can do.

StarTalker is capable of both originating and answering calls, which makes it quite versatile and opens up a number of opportunities in areas such as voice mail and tele-marketing, amongst others.

The card could, for example, answer and store messages for particular people. Callers could be given options of people to contact, or of different numbered 'mail boxes' to leave a message in. StarTalker would then recognise the commands which could be made by using a touch tone, or DTMF, phone. The people who use the mailboxes could ring up at later, enter a password via their phone and then receive their messages.

As well as answering calls, the card can also make them. One application of this would be for StarTalker to receive a message, then call someone to tell them that a message is waiting. That person could then call StarTalker back, enter a password and then hear the message. Programming the card would enable it to do all this, but at the moment this is largely speculation.

DIALLING ON

So why buy StarTalker? Actually, not just anyone can buy it – it will be on sale to developers only. So why the review? *Express* brings you the latest in technology and StarTalker demonstrates just how versatile PCs can be, as well as being an inexpensive way of creating a voice mail system, amongst other things.

Admittedly, this is a product that many people won't necessarily have access to, but perhaps once developers have got their hands on StarTalker they might bring out a new version complete with enough software for any PC user to be able to utilise it fully. ■

SHOW YOUR CARDS

FOR

- ▲ Can be used, in theory, for many applications
- ▲ BABT approved

AGAINST

- ▼ What the card is capable of, as it stands, remains speculative

PRICE

£800 RRP. However, the card is only being sold to developers and not individuals.

TEL: 061
773 3897
Ext 21

BANKHOUSE

Old Co-op Bldg, Warwick Street, Prestwich
Manchester. M25 7HN

FAX: 061
773 0140

LEISURE

ATARI

Discovery STFM 8 titles.....£229
Turbo STE Joy/12 titles.....£289
Extra 1040 STE 8 titles.....£399
Lynx Game System.....£74
Portfolio.....£156

AMIGA

Screen Gems.....£309
Class 90's/1st Step.....£390
10 Astro Game Pack.....£37
Disk Drives, Monitors,
Emulators, As Available
Phone for details

FAX'S

Amstrad 960AT.....£529
Amstrad FX5000.....£339
Brother 160.....£339
Toshiba TF102.....£389
Toshiba TF232.....£508

SPECIAL BUSINESS PACKAGE

PCS 286 HD40
Col Mon, Mouse 1992
software, Panasonic 24 pin
printer, cables, 12 months on
site maintenance
£945 While stocks last

PORTABILITY SPECIAL

Hyundai LT5 386 2Mb RAM
40Mb HD VGA inc.
Canon BJ10e, carry case,
Battery Charger, File transfer
software
£1530 Limited Stock

Everex E series
286/16 40HD Col.....£697
386/20 40HD Col.....£891
Apricot XEN S
286 47 HD Col.....£845
386 50HD Col.....£1010

MITAC PC'S

286/12 1.2 FDD, 1 Mb RAM,
40Mb HD, Colour VGA.....£797
120Mb HD, as above.....£972
386/20, 1Mb RAM,
40Mb HD, Super VGA Col...£1299
As above, 120Mb 110.....£1494
Mitac PCs supplied with Microsoft
Windows 3 & Mouse F.O.C.

SEGA

Mega Drive.....£119
Game Gear.....£79
Master System.....£49
Master System Plus.....£64
Wide variety of Games Available

DISKS

Unbranded ea 10 100 250
350k DSDD 40p 30p 25p
720k DSDD 50p 40p 32p
1.2Mb DSHD 65p 55p 45p
1.4Mb DSHD 1.00 80p 45p
FREE Labels & Disk Boxes

LASERS

Brother HL4.....£719
Brother HL4PS.....£1189
Brother HL8E.....£989
Brother HL8V.....£1079
Brother HL8PS.....£1489
Canon LPB4.....£695
Canon LP8III.....£1097
Canon LP8IIIT.....£1487
HP LJIII.....£1000
HP LJIII D.....£1609
Panasonic KXP4420.....£675
Panasonic KXP4450i.....£1100
Panasonic KXP4455.....£1650
MT904.....£699
MT905.....£759
MT906.....£829
MT911.....£1099

AUTHORISED DEALERS

for Apricot, Everex, MT,

Novell and many more

Phone for Details

MITAC PORTABLES

3030D 386, 16Mhz
40Mb, HD, VGA.....£1499
As Above + Fax Modem.....£1629
3025D 386SX Notebook
20Mb, VGA.....£1499
As Above + 40Mb HD.....£1629

Mitac Portables supplied
with Microsoft Works
NB includes Windows 3

AMSTRAD

GEM 3.	12MD	14CD	14HR
3086SD	421	499	578
3086DD	460	538	617
3086HD	617	538	774
3286SD	499	578	656
3286HD40	734	813	891
PCW8256	£289		
PCW8512	£439		
PCW9512	£479		
ALT386	£1559		
ALT286	£1274		

PORTABLES

TOSHIBA

T1000SE.....£472
T1000XE.....£626
T1000LE.....£941
T2100XE 20.....£1130
T1200XE 40.....£1256
T2000SX 20.....£1669
T3100e 20.....£1256
T3100e 40.....£1511
T3200SX 40.....£2264
T3200CSX.....£4217
Hyundai 286.....£849
Hyundai 386.....£1425
(with free carry case &
file t/fer software)
Commodore CLT.....£1025
Phillips PCL101.....£449
Phillips PCL203.....£1275

PRINTERS

MT81.....£109
MT82.....£259
Citizen 120D.....£110
LX400.....£135
LX850.....£199
FX1080.....£395
LQ400.....£203
LQ2250.....£729
Panasonic 1081.....£122
Panasonic 1123.....£178
Panasonic 1180.....£138

Modems & Fax

Worldport 9600.....£585
Worldport 2496.....£375
Worldport 2400.....£295
Worldport 2423.....£253
Acoustic Coupler.....£40

CANON

BJ10e
£220

SOFTWARE

Autoroute Plus.....£202
Corel Draw 2.0.....£299
Framework III.....£348
Harvard Graphics.....£279
Laplink III.....£79
Lotus Agenda.....£259
Lotus Works.....£105
Lotus 123.....£315
Norton Utilities.....£108
Microsoft Works.....£120
MS Quick BASIC.....£59
Paradox 386.....£347
PC Tools V6.....£89
Smartware II.....£414
Superbase 4 V1.2.....£349
Supercalc 5.....£79
Wordperfect 5.1.....£279
Wordstar V6.....£229
Windows 3.0.....£75
Word Window.....£299

MISC

SWITCHES
DATA CARTRIDGES
TAPE UNITS
MICE UPS TONERS
CARTRIDGES
FAX PAPER

3M COMPUTER TAPE

	10-40	50-90	100+
C162	15.82	15.14	13.77
C55	14.02	13.41	12.20
C112	14.58	13.95	12.69
Bulk Reel only	13.13	12.56	11.43

TERMS

All prices exclude delivery and
V.A.T. All good U.K. source
with Manufacturers Warranty.
Cash, Cheque, Credit Card with
order. Tenders welcome.
Goods offered subject to
being unsold.
Goods not offered on trial basis.

PHONE 061 773 3897

EXT 21

PRICES & SPECIFICATION SUBJECT TO CHANGE E & OE

A VEIN ATTEMPT AT PERSONAL ID

Is fingerprinting about to be replaced by vein checking as a method of identifying individuals? What exactly is it? How does it work? Tim Howell gets to grips with this new technology to see where its future lies...

Fingerprinting has long been regarded as the definitive method of personal identification, but it could soon be superseded by technology that reads the unique vein pattern on your hand and uses that as a way to identify people.

Veincheck, the name of the new technology, has been developed by Joseph Rice, an engineer from Nottingham, in combination with the British Technology Group. Rice was doing some work on improving the way bar codes could be read by computers and noticed that the vein patterns on his wrist were structured in such a way that they resembled the codes.

With vein checking fraud is impossible – veins are always attached to their owners so they can't be lost or stolen

At this early stage Rice had to determine whether vein structures were uniquely individual – if they were to be used as a form of personal identification they have to be. Initially he examined the wrists of his family, and after observing that their veins were indeed different, he set about proving it on a larger scale. For this he went to a local supermarket and spent some time looking at customer's wrists – they too, he noticed, were also different. The next step was seeing if these observations

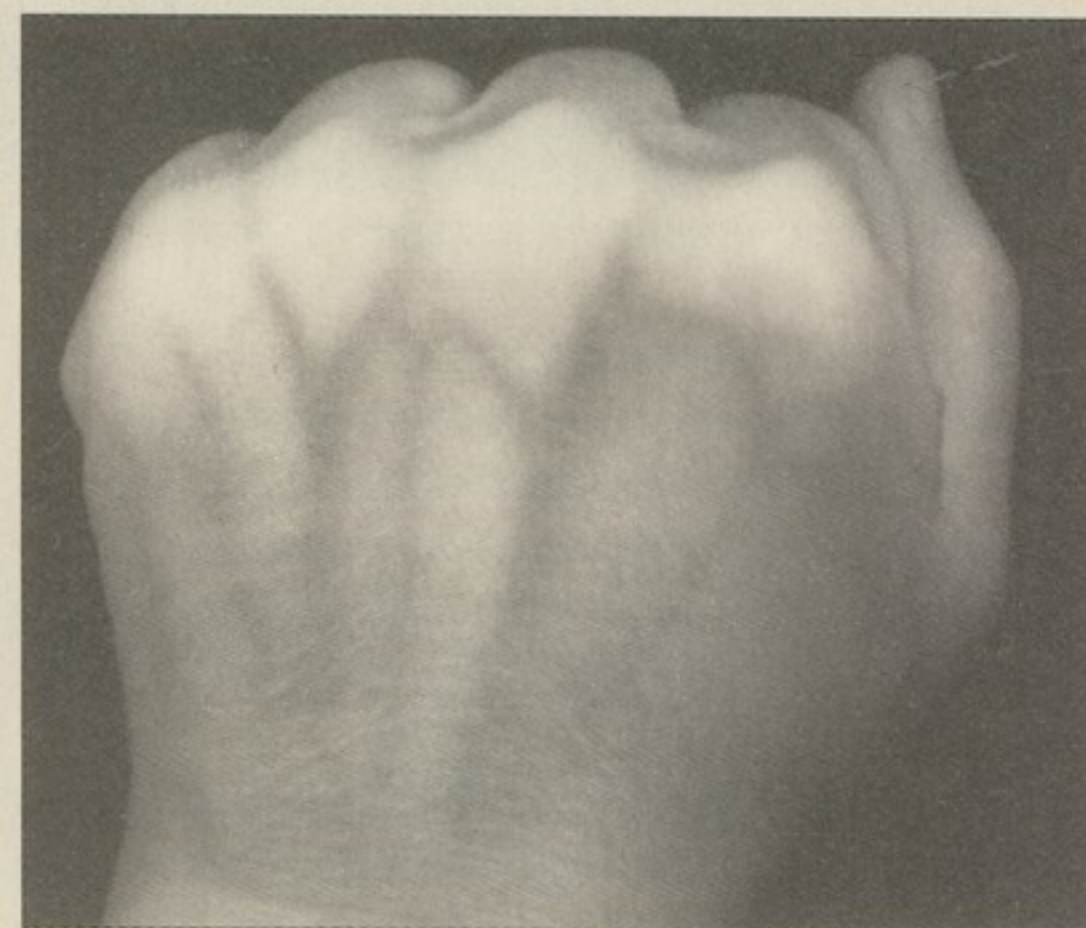
could be interfaced with technology.

The uniqueness of vein structures has been confirmed by a more systematic study undertaken by Cambridge Consultants, Cambridge. The company tested 40 people to see if their veins matched. The method behind their testing was to divide the hand into 20 hexagonal zones and then look at the vein patterns to see where the joins and runs of the veins intercepted with the hexagonal zones. From there a number could be generated describing the interceptions.

This method was not as accurate as testing the whole vein pattern, but when the results were compared they confirmed the theory that vein patterns were different. Results were evaluated mathematically using a 'confusion matrix' technique. When a person was compared with their own vein pattern a result of 0.9 or 1.0 (perfect) result was achieved, while the closest anyone else came to being matched with the pattern was 0.4 – a comparatively low result. The differences in the results are large enough to show that vein structures vary, and that it would be possible to set a threshold level to determine if a pattern was authentic or not.

CONSISTENT IDENTIFICATION

Other ways of identifying people such as voice recognition, fingerprinting and hand-written signatures are not as consistent as this new method, it is claimed. On any given day a voice could sound different, fingers could be dirty or a name could be signed differently. With vein



• *This infra-red photograph highlights the vein structure of a hand as it is used by the Veincheck system. If you compare what you can see of your own hand's veins with the photo, you will see just how much of a difference the infra-red makes. And you might even be able to see how your veins are structured differently.*

identification the veins are always in the same position, and whether your wrist is dirty or not, the infra red signal that reads their position can still work.

While many of the other forms of identification can change from day to day, some changes can be more permanent. In the case of fingerprinting, fingers can easily be damaged, in which case any form of identification that uses them will be rendered immediately out of date. Veins, on the other hand (no pun intended), are positioned on the wrist in such a way that it is much less likely they would be physically damaged.

FRAUD BUSTERS

One of the stimuli for Rice's foray into identification

LIKE THE BACK OF YOUR HAND: THE TECHNOLOGY BEHIND VEINCHECK

For demonstration purposes, Veincheck is currently running on a PC with frame grabber and CCD (Charge Couple Device) camera. A CCD camera is basically a normal camera, but one that doesn't filter out the infra-red signals. Most cameras are capable of capturing infra-red patterns, but they have had filters added to remove as much of these as possible.

So really the camera used with Veincheck is standard technology. This is how the system will stand until smaller, low-current chips to do the work are developed.

The camera scans the back of the hand below the knuckles and above the wrist. The camera responds to the photons given off, reads the values serially into the image processing chip, which turns those values into a video signal and the computer analysis the signals. The image is basically converted from digital to analogue and

back to digital again.

The way the veins are compared is similar to aligning two photographic slides on top of each other. There is a standard reference vein 'map' which is compared with the vein structure of the user.

Certain points on the reference vein and the user's vein are then compared to determine the personal identification code. Because people's veins are different they will line up with different points on the reference map, providing a different personal code each time.

The mechanics of the system are quite straightforward. The image of the hand is scanned in from the camera at a size of 512 x 512 pixels. From there the image is enhanced which "teases the vein pattern out of the image." The pixels are filtered so that only features larger than 5 x 5 pixels are included in the image.

When processing the images the newly scanned

image is compared with a database of reference images. A search routine scans the hand to find the side of it, and has further search parameters to find a 'good vein' (a vein of more than 32 by 32 pixels). The two images are aligned on top of each other. What the program is searching for are points on the images that match up with each other. Where the images don't line up, they can be rotated to try and find a match, up to five degrees.

If the person who the reference image is based on has their veins scanned and processed, then typically there will be 4,000 hits. If it is someone else, then there will only be between 800 and 1,000 hits – quite a difference.

The system that is demonstrating the principles behind the technology is a 386-based PC with the program code written in a combination of BASIC and Assembler. Currently it can scan, grab and compare the image in half a second.

VEIN CHECKING

PERSONAL IDENTIFICATION



• Joseph Rice shown along side an earlier version of Veincheck running on an Amstrad CPC6128. He now uses a 386 PC

methods was to combat credit card fraud – he once lost a credit card himself which was then used fraudulently.

However, with vein identification fraud is impossible, Rice believes. Veins are always attached to their owner and so cannot be lost or stolen. Veins can't be surgically copied either, so forgery is out of the question.

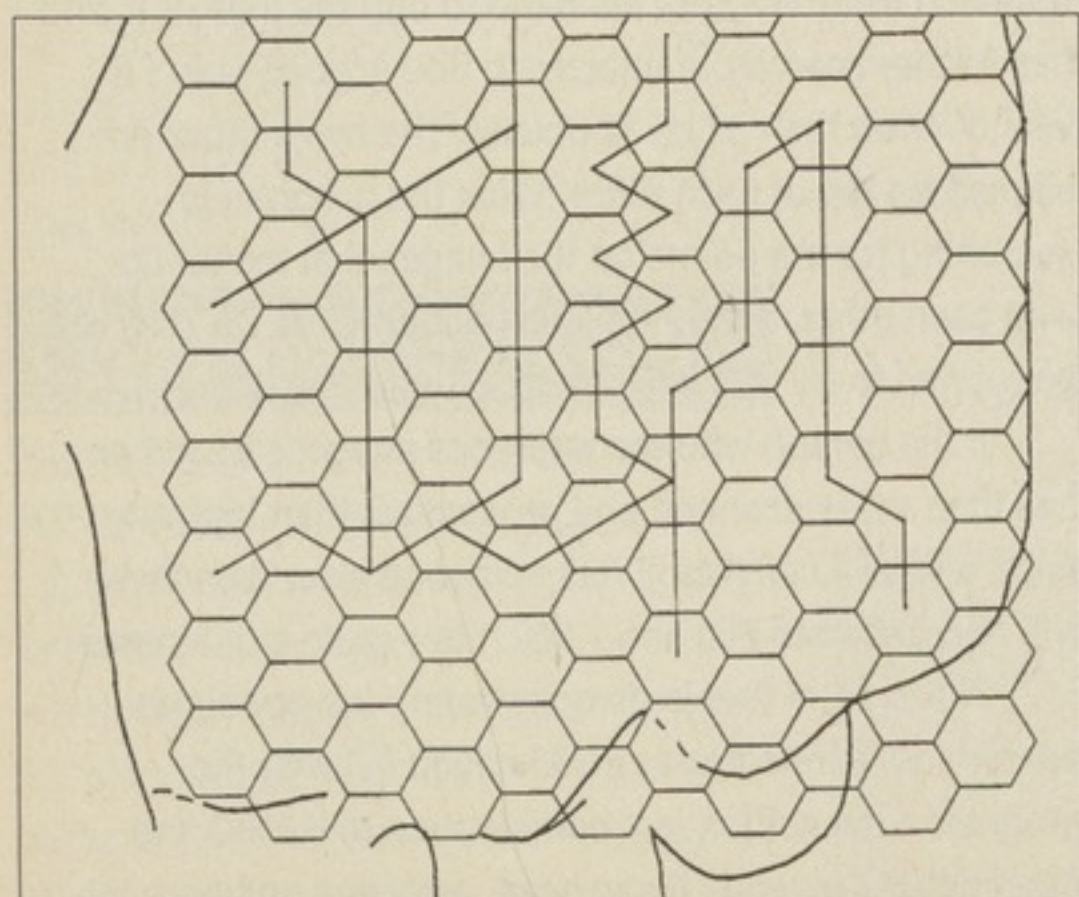
And it may be a gruesome thought, but even if someone's wrist has been severed or exhumed to try and beat the system, the infra-red scan will be able to detect changes in the limb's haemoglobin.

WORKING ON WAVE LENGTHS

The infra-red technique works by scanning the limb at different wave lengths. Skin is translucent to infra red signals, so no matter what colour it is the veins underneath the skin can still be read. Blood absorbs infra-red signals at different levels, depending on whether the blood contains oxygen or not. Thus, the infra-red signal could differentiate between a dead or live limb – if there is no oxygen, then the wrist is dead or in a poor state.

Obviously, as the system stands it is too large and unwieldy for personal use, at least on a small scale. For it to develop from here to a more practical level, the device would need an inexpensive chip-set and one that doesn't require too much power to work off. Rice believes it's only a matter of time before this happens.

Because the image scanned by the computer is only 512 x 512 pixels it doesn't take up a tremendous amount of memory. It would use even less once the image data has been compressed, and could then be stored on a small memory chip. If this is used in combination with a low-cost, low-power image capturing device, then there is no reason why the whole package could not be made small enough to fit on a credit card.



• Research by Cambridge Consultants into vein structure used grids like the one here to determine unique patterns

MUCH MORE THAN SECURITY

Once this happens Rice foresees the new identification method going much further than just the security requirements we are currently accustomed to.

For example, you may need a card to get into and use your car. As well as being a key to open the doors, the car could recognise the driver and set the car up in the way he or she likes – tuning the radio to a particular station or setting the height of the driver's seat.

If someone else tried to use their own card to enter the car, then not only would they fail in their attempts, but they would also be in trouble. The car could remember the identification number of the card and the user, compare it with those on record and then identify the would-be thief. This is much like how fingerprinting works today, but having the cards linked electronically could mean that offenders will be caught sooner.

And what happens if you lose your 'key' and want to get into your car? All is not lost. You could use someone else's card to transfer your vein pattern to the vehicle. The car would recognise the pattern of the veins, but not the match with the actual card. The card would still give you access to the car. However, this method is a bit risky. When the identification is being transferred via the borrowed card it will not be in an encrypted format. In theory this could mean the pattern could be intercepted – the radio waves being stored for future use. Rice says this method should only be used if absolutely necessary.

WILL IT HAPPEN?

As things stand at the moment, the technology for miniaturising Veincheck is almost available, and the overall situation is at the stage where it is up to companies to start thinking about using it. Rice has been in contact with several large security and technology groups and has an agreement with the British Technology Group (BTG) for further development and research. BTG holds the patent on the system. After this it really depends on whether the technology is picked up by a larger company to get it into the mainstream, probably from Japan.

Several Japanese companies, such as Toshiba and Canon, are looking into ways of developing low cost digital photography, the basic principles of which could be applied for vein checking.

One feature in Veincheck's favour at the moment is that it doesn't need to use high resolutions to work, which means that the processor controlling it doesn't have to do a lot of number crunching. Accordingly, the technology for accomplishing this on a small scale should not have to be too complex or expensive.

CCD (Charge Couple Device) technology is more

VEIN CHECK VS FINGERPRINTS

In simple terms, as far as identification purposes are concerned, the vein identification system is a direct competitor of fingerprinting. Or is it? *Express* talked to those who know best about these things: the Birmingham Identification Bureau.

Fingerprints have been used to identify people since 1901, when they were first classified and recorded. Initially it was difficult to convince people that everyone's fingerprints were different, but it wasn't long before they were regarded as being a unique and a conclusive form of identification.

Brian Reece, Deputy Head of the Birmingham Fingerprint Bureau, after first hearing about the vein identification system thought it would be a "horrendous thing to record". The Fingerprint Bureau is, admittedly, mainly concerned with identifying people at the scene of a crime. In this respect vein identification would not be the most useful form of identification – how could you get vein prints off a plate for instance?

Fingerprinting is based on recording the ridges of skin on fingers. Everyone's fingers have a unique ridge structure and in terms of keeping a record of fingerprints it's as easy as getting an imprint of the print with ink. And filing them is a simple matter of keeping a database of different types of prints, as they vary in the position and shape of particular ridges.

Classifying the ridges is a straightforward process, but Reece sees veins as being much more difficult to record: "There is no strict pattern to them, and the characteristics would vary depending on what level of the wrist the scan is made from. It would also be difficult to file (the veins) in order."

In more specific applications, Reece doesn't see any problems with using veins for identification: "The possibilities in terms of the practicalities involved are not very good, but for a specific type of application they could be used." In the past there has been talk of using nose and ear impressions as a method of identification, in tandem with fingerprints, so using veins is just another way of using the unique characteristics of nature.

As far as fingerprinting technology is concerned, the eventual goal is for a finger to be placed on a metal plate, for example, and then have the print read from it. Millions of pounds have been spent to develop this type of technology, but nothing definite has resulted: "Many firms say they can do it, but it's a matter of money as to whether it is used or not." Currently computers are used to store and compare fingerprints on screen, but they can't be read by the computers just yet. In practical terms, fingerprints are easier to read and identify, both at the 'scene of a crime' and as an overall method of personal identification.

However, while vein identification does seem a bit impractical at the moment it may not only be because the technology is not yet miniaturised, but because it is a totally new concept that takes a bit of getting used to. Many of the problems voiced by Reece have been looked into by Rice, and the solutions to them are on the drawing board.

expensive than the photo-diode technology that is being developed to be used in applications such as Veincheck. Edinburgh University is developing a low-cost, low-current photo diode that could be available at a cost of about £25 per semiconductor. The university is producing small runs of the diodes, so it might not be long until this technology is with us.

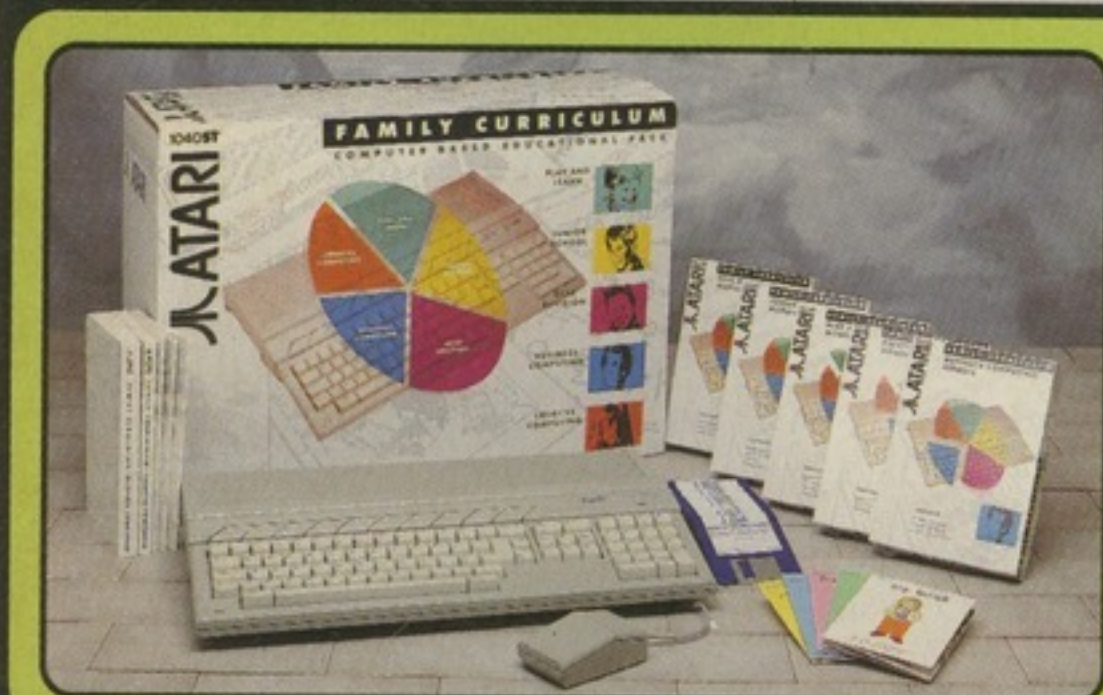
In the meantime, though, we can all dream of the days when we will be using our wrists and a piece of plastic to enter our homes, cars and businesses. ■



ATARI ST 520ST-E DISCOVERY XTRA PACK

RETURN THE COUPON FOR A
FREE! COLOUR CATALOGUE

HARDWARE:	
512K 520ST-E + MOUSE	£329.99
ENTERTAINMENT SOFTWARE:	
ANARCHY - Arcade Game	£19.99
DRAGONS BREATH - Adventure	£29.95
INDIANA JONES - Arcade Adv	£19.95
SUPER CYCLE - Racing Game	£19.95
PRODUCTIVITY SOFTWARE:	
CONTROL.ACC - Utility Software	FREE
EMULATOR.ACC - Utility Software	FREE
FIRST BASIC - Programming	£49.99
NEOCHROME - Art Package	£29.99
ST TOUR - Tutorial	£4.99
JOYSTICK CONTROLLER:	
ATARI CX40 JOYSTICK	£4.99
PLUS! FREE FROM SILICA:	
TENSTAR GAMES PACK	£219.78
PRODUCTIVITY PACK	£104.97
TOTAL VALUE:	£834.54
YOU SAVE:	£505.54
SILICA: £329	
PLUS! FREE HOLIDAY ACCOMMODATION	



1040ST-E FAMILY CURRICULUM PACK

The Family Curriculum Pack comes with a 1040ST-E computer and mouse plus 5 software modules (3 titles in each), one for every age range. The combination of education, creative and business software from Atari, plus the FREE entertainment and productivity packs from Silica, makes for a package the whole family can enjoy!

PLUS! FREE HOLIDAY ACCOM

1Mb 1040ST-E + MOUSE	£399.99
1. PLAY & LEARN	£76.59
2. JUNIOR SCHOOL	£58.54
3. GCSE REVISION	£55.54
4. BUSINESS COMPUTING	£159.85
5. CREATIVE COMPUTING	£134.97
PLUS! FREE FROM SILICA	
TENSTAR PACK	£219.78
PRODUCTIVITY PACK	£104.97
TOTAL VALUE:	£1210.23
YOU SAVE:	£811.23
£399	
SILICA PRICE - INC VAT + FREE DELIVERY	

ATARI 520ST-FM DISCOVERY PACK

£279

INC VAT + FREE DELIVERY + FREE TENSTAR & PRODUCTIVITY PACKS

ATARI ST - MORE THAN JUST GREAT GAMES!

FREE! FROM WITH SILICA EVERY ATARI ST

TENSTAR GAMES PACK

The TenStar Games Pack is THE software compendium for Atari ST owners, featuring ten top titles with a variety of different types of games for you to enjoy. Each title is packaged in its own plastic case, with a colour sleeve and full instructions. The TenStar Games Pack is FREE! when you buy your ST from Silica Systems.

FREE! WORTH: £219.78



FREE! 16 NIGHTS HOLIDAY HOTEL ACCOMMODATION

Every Atari ST from Silica comes with a FREE 72 page, full colour brochure with accommodation vouchers. These vouchers entitle 2 people to stay up to 16 nights in one hotel (or any number of hotels to a total of 16 nights) with accommodation FREE (you could take up to six nights for four people, or other options). Choose from the 250 hotels featured in the catalogue. All you have to pay for are your meals (prices are listed in the brochure). Reduced rates in top London hotels and hotels in France are also featured.



TOTAL FREE PACKAGE

TENSTAR GAMES PACK - £219.78:	
Asterix - By Coktel Vision	£24.99
Chess Player 2150 - By CP Software	£24.95
Drivin' Force - By Digital Magic	£19.95
Live & Let Die - By Elite	£19.99
Onslaught - By Hewson	£19.99
Pipe Mania - By Empire Software	£24.99
Rick Dangerous - By Firebird	£24.99
Rock 'n' Roll - By Rainbow Arts	£19.99
Skweek - By US Gold	£19.99
Trivial Pursuit - By Domark	£19.95

PRODUCTIVITY PACK - £104.97:	
1st Word - Word Processor	£59.99
Spell It! - Spell Checker	£19.99
ST Basic - Programming Language	£24.99

TOTAL RRP: £324.75

FREE! WORTH NEARLY: £325

PLUS! FREE HOLIDAY ACCOMMODATION

SILICA SYSTEMS OFFER YOU

- **FREE OVERNIGHT COURIER DELIVERY:** On all hardware orders shipped in the UK.
- **TECHNICAL SUPPORT HELPLINE:** Team of Atari technical experts at your service.
- **PRICE MATCH:** We normally match competitors on a "Same product - Same price" basis.
- **ESTABLISHED 12 YEARS:** Proven track record in professional computer sales.
- **BUSINESS + EDUCATION + GOVERNMENT:** Volume discounts available for large orders.
- **SHOWROOMS:** Demonstration and training facilities at our London & Sidcup branches.
- **THE FULL STOCK RANGE:** All of your Atari requirements from one supplier.
- **FREE CATALOGUES:** Will be mailed to you with offers and software/peripheral details.
- **PAYMENT:** By cash, cheque and all major credit cards.

Before you decide when to buy your new Atari ST computer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your ST, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. We have been established for over 12 years and, with our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature and begin to experience the "Silica Systems Service".

MAIL ORDER HOTLINE
081-309 1111

SILICA SYSTEMS



MAIL ORDER:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	Tel: 081-309 1111
Order Lines Open: Mon-Sat 9.00am-6.00pm	No Late Night Opening	Fax No: 081-308 0608
LONDON SHOP:	52 Tottenham Court Road, London, W1P 0BA	Tel: 071-580 4000
Opening Hours: Mon-Sat 9.30am-6.00pm	Late Night: Thursday until 8pm	Fax No: 071-323 4737
LONDON (SELFRRIDGES):	1st Floor, 369 Oxford Street, London, W1A 1AB	Tel: 071-629 1234
Opening Hours: Mon-Sat 9.30am-6.00pm	Late Night: Thursday until 8pm	Ask for extension 3914
SIDCUP SHOP:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	Tel: 081-302 8811
Opening Hours: Mon-Sat 9.00am-5.30pm	Late Night: Friday until 7pm	Fax No: 081-309 0017

To: Silica Systems, Dept NCE-0891-63 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND FREE ATARI COLOUR CATALOGUE

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode: Tel:

Which computer(s), if any, do you own?

BE A WINNER!

COMPETITION

ELEGANT PC EXPANSIONS



£570 – that's the price of being number one on your own network and Express is giving it away! - a PC LAN Station that is!

VGA graphics. All that you'll need is a network equipped PC to act as a file server and you're in business.

This elegant networking solution means that two (or more) users can share the same PC as a file server without needing two or more bulky system units.

The LAN Station's versatility doesn't stop there. It's possible to get one with a floppy drive or a hard drive and these can act as a stand alone PC. Users who don't need a row of expansion cards are using LAN stations as a stand alone desktop PC that doesn't take up much space. More information on LAN Stations is available from Plus Five Peripherals on 0483 756813.

Now onn with the competition. If you don't want to dig deep into your pockets just yet and you'd like to try your wit and skill at winning the £570 LAN Station, all you have to do is correctly answer the four simple questions in the box below and complete the tie-breaker.

Send your entries in on the back of a postcard or envelope to: I'd love a LAN Station, *New Computer Express*, 29 Monmouth Street, Bath, Avon BA1 2DL. ■

This week *Express* is getting together with Plus Five Peripherals Ltd to bring you the chance to expand your PC set up into a network.

The LAN Station (known in the biz as the Space station because it takes up little space) looks like a PC keyboard, but hidden under the keys are all the components needed to make the LAN Station a stand alone PC.

We're giving away the entry level model that comes equipped with all the standard ports, a network connector and

WHO, WHAT, WHICH, WHY AND WHEN?

- | | | |
|----------------------------------|---|--|
| 1) What does LAN stand for? | d) Network South East | 4) Which of the following computers doesn't have built-in networking? |
| a) Love and Nuptials | | a) Sam Coupé |
| b) Local Area Network | 3) Which company sells LAN Stations and has the phone number 0483 756813? | b) LAN Station |
| c) Limb Articulation Node | a) Plus Five | c) ZX81 |
| d) Lychees and Pasta | b) Minus Seven | d) Atari ST |
| 2) Which network is the slowest? | c) Times Eight | Tie Breaker – complete the following sentence in less than 12 witty words: |
| a) Ethernet | d) Divided by Four | <i>If I were on Network News I'd close with the line...</i> |
| b) ArcNet | | |
| c) FidoNet | | |

MAKE SURE YOU GET A COPY OF NEXT WEEK'S EXPRESS

Complete this form and hand it to your newsagent

TO THE NEWSAGENT: Please reserve me copy/copies of *New Computer Express* every week, beginning with issue 145, out on 17 August.

NAME

ADDRESS.....

TELEPHONE NUMBER

To the newsagent: *New Computer Express* is published by Future Publishing and is available from your local wholesaler. Send back all your Future shop save coupons for entry in a free draw to: Kate Hodges, Future Publishing, 30 Monmouth Street, Bath BA1 2BW.

COMING NEXT THURSDAY

Fraud and Abuse

The EEC's first report on computing's darker side revealed and reviewed

3D figures

A great new 3D spreadsheet for the ST - will it make your finances look any better?

Philips Notes

The PCL 203 - first review of this top notch 286 notebook

PLUS

- Hot news
- Front End
- Games Week
- Whole Wired World
- Tech Tips
- Circuit City
- Express On-line
- Express Mail
- The PD Column
- Programming
- Columns for: Amiga, CPC, C64, Macintosh, PC, Spectrum and ST

AND

ALL THE WINNERS FOR ALL THE COMPOS EVER!

NEW COMPUTER EXPRESS

EDITOR • Andy Storer
NEWS EDITOR • Tim Smith
PRODUCTION EDITOR • Julie Tolley
REVIEWS/TECHNICAL EDITOR • Keith Pomfret
ART EDITOR • Amanda Cook
STAFF WRITERS • Dave Golder • Tim Howell
GAMES REVIEWER • Stuart Campbell

CONTRIBUTORS:

• Steve Gold • Jason Holborn
• Frank O'Connor • Haydn Fitz-Williams
• Mary Branscombe • Robin Alway
• Andrew Roberts • Cliff Ramshaw
• Andy Hutchinson • Ian Wrigley
• Rod Lawton • Paul Rigby

CIRCULATION DIRECTOR • Sue Hartley
AD MANAGER • Mike Jennings
SENIOR SALES EXECUTIVE • Tim Partridge
AD EXECUTIVES • Siobhan Kennedy-Coyne • Charlie Nicholls
AD PRODUCTION • Frances Wasem
AD TYPESETTING • Terry Mackereth
PRODUCTION TECHNICIANS • Simon Windsor
• Chris Stocker • Jerome Clough
PUBLISHER • Steve Carey

ABC audited circulation July-December 1990:20,204 copies per week

We regret we cannot enter into any personal correspondence. Technical enquiries should be addressed to Tech Tips at the address below. While every care is taken in the preparation of *New Computer Express*, Future Publishing cannot be held responsible for the consequences of any errors that may occur.

• Subscriptions: The Old Barn, Somerton, Somerset (0458) 74011
• Printed by Redwood Press, Melksham, Wilts
• Distributed in UK and Eire by Future Publishing (0225 442244), rest of world by Comag (0895 444055)

© Future Publishing Ltd 1991

CONTACTS

Tel: 0225 442244 Fax:482018

E-mail: ASPECTS: 061 792 0260

CIX @ astorer

GOLD @ 84:TXT152

PRESTEL @011112623

'Your guarantee of value'

30 Monmouth Street, Bath BA1 2BW

This magazine comes from Future Publishing, a company founded just six years ago, but which now sells more computer magazines than any other publisher in Britain. We offer:

Better advice. Our titles are packed with tips, suggestions and explanatory features, written by the best in the business.

Stronger reviews. We have a cast-iron policy of editorial independence, and our reviews give clear buying recommendations.

Clearer design. You need solid information fast. So our designers highlight key elements by using charts, diagrams, summary boxes, annotated photographs, etc.

More reader interaction. We draw strongly on readers' contributions, resulting in the liveliest letters pages and the best reader tips. Buying one of our magazines is like joining a nationwide user group.

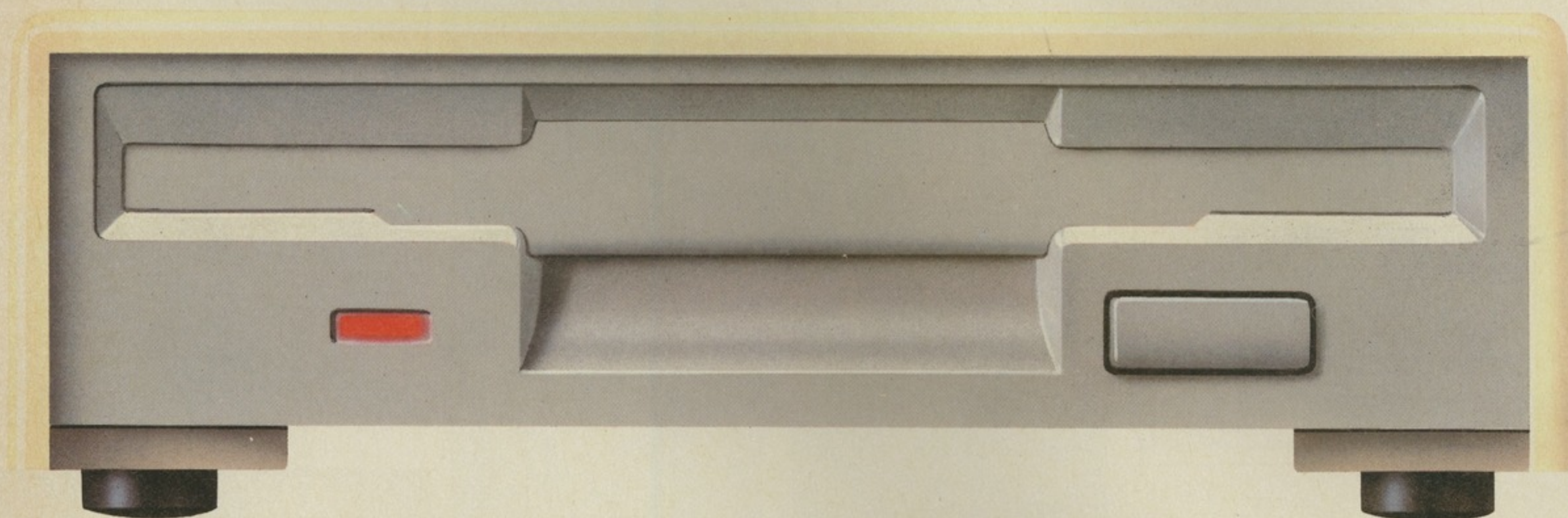
Better value for money. More pages, better quality: magazines you can trust.

future
PUBLISHING

Home of Britain's finest computer magazines.

New Computer Express
Amiga Format • ST Format
Amiga Power • Amiga Shopper
PC Plus • PC Answers • 8000 Plus
Amstrad Action • Your Sinclair
Commodore Format • Sega Power

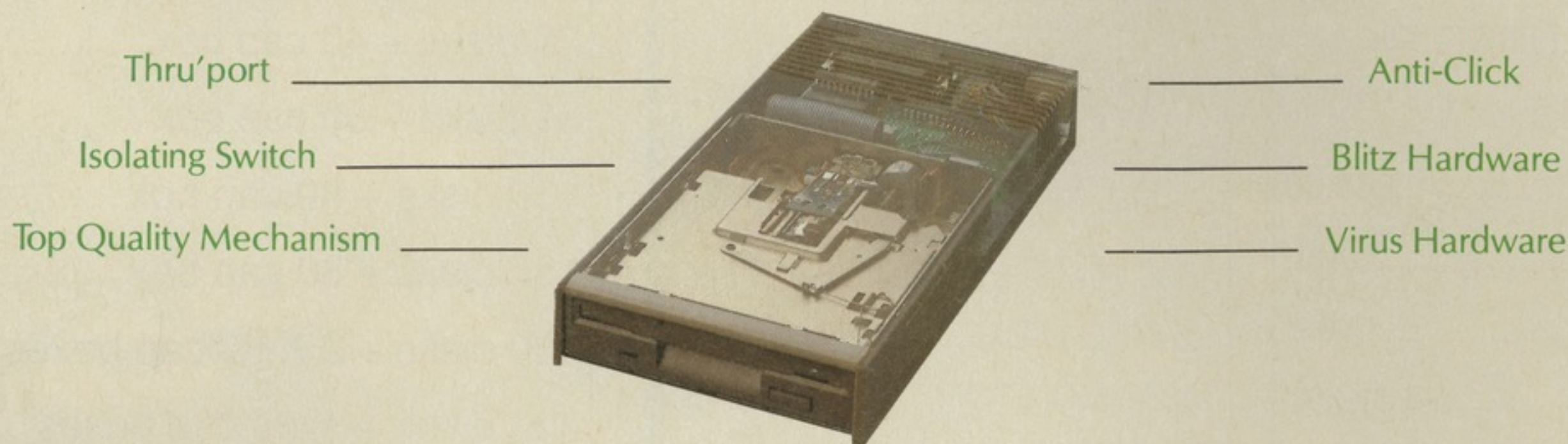
Where you can stick it.



Viruses, disk swapping, clicking drives, disks which won't back up. Is there no end to the whingeing of the Amiga user?

At Power, we want to tell you just where you can stick your disks and worries. In fact we will show you. The slot in this picture belongs to our PC880B, the first intelligent disk drive. Insert a disk.

Now you can back up at lightning speeds using the inbuilt Blitz Amiga hardware, with free software, (even if the disk is Atari or PC) and if your computer has a virus the PC880B will stop it being written to the bootblock of any of your drives, though you can still save files as normal.



When you do not want these features, switch them off and the PC880B will sit quietly, without clicking, pretending to be simply an extra drive.

The PC880B, the only drive to introduce Blitz Amiga, the power anti-click device and to combat viruses, is only available direct from Power, priced at just **£65**.

We have noticed how pricey unintelligent drives are. Perhaps, its your turn to tell people where to stick it.

1988 COPYRIGHT ACT
Power Computing Ltd., neither condones nor authorises the use of its products for the reproduction of copyright material.
The backup facilities of this product are designed to reproduce only software such as Public Domain material, the user's own programs or software where permission has been clearly given.
It is illegal to make copies, even for your own use, of copyright material, without the express permission of the copyright owner, or the licensee thereof.

£65

Only available at

POWER COMPUTING LTD

Unit 8 Railton Road Woburn Road Industrial Estate Kempston Bedford MK42 7PN

Tel: 0234 843388 Fax: 0234 840234



Price includes VAT and is subject to change. Specifications are subject to change without notice.

Swift Microcomputers Ltd.

84 High Street North, Dunstable Bedfordshire, LU6 3HP. Tele: (0582) 476257/8

3.5 DS/DD

50	£21.75
100	£33.00
200	£62.00
500	£137.00

Including labels

5.25 DS/DD

50	£11.50
100	£22.00
200	£42.00
500	£95.00

Including sleeves

DISK BOXES

3.5 40 CAP	£4.10
3.5 80 CAP	£4.50
5.25 50 CAP	£5.00
5.25 100 CAP	£5.50

ATARI

520ST - E DISCOVERY PK

£299

FAMILY CURRICULUM PK

£365

520ST - E TURBO PK

£315

EXTERNAL DRIVE.....	£65.00
STACY ST	CALL
ATARI TT	CALL
MEGAFILE 30	£339.00
MEGAFILE 60	£469.00
SM124 M'TOR.....	£137.00
SC1224 M'TOR	£259.00
LYNX	£73.00
PORTFOLIO.....	£175.00

AMIGA DEALS!

**A 500 Computer with
1Mb Ram & Second Drive**

£365!

0.5 Meg Ram £19.99

(add £6 for clock)

External Drive £55.00

**PHILIPS
CM8833 Mk2**

£219

INC LEAD

**COMMODORE
CDTV**

**CALL FOR
LATEST DEALS!**

**SONY 3.5 DS/DD
BULK 37p**

PRINTERS

STAR

LC 10	£155.00
LC24 - 10	£215.00
LC 200 COLOUR.....	£215.00
LC 24 - 200	£295.00

3 1/2 HD

50	£28.50
100	£55.00
200	£105.00

AMSTRAD

ALT 286	£1580.00
ALT 388	£2030.00
PC2086 HD/COL	£893.00
PC2086 SD/COL	£599.00

**OTHER TYPES &
CONFIGS AVAILABLE**

30MB H/CARD £159!

COMMODORE

AMIGA 500	£305.00
CARTOON CLASSICS	£365.00
CLASS OF 90s	£510.00
FIRST STEPS	£510.00
A590 20MB H/DISK.....	£279.00
1.5 MEG RAM	£85.00
1084S MONITOR	£245.00
C64 P/INTELLIGENCE.....	£119.00
AMIGA 1500/2000	
AMIGA 2000	CALL
AMIGA 1500	£650.00
52MB H/CARD	£299.00
105MB H/CARD	£439.00

3.5 DS/DD & BOXES

25 disks + 40 cap box	£13.00
50 disks + 80 cap box	£24.00
100 disks + 80 cap box	£36.00
150 disks + 80 cap box	£51.00
200 disks + 2 X 80 cap boxes....	£65.00
400 disks + 4x80 cap boxes....	£138.00
500 disks + 5x80 cap boxes....	£155.00

**NO QUIBBLE
LIFETIME GUARANTEE**

Call or send Cheques/Postal Orders to:

SWIFT MICROCOMPUTERS LTD

84 HIGH STREET NORTH, DUNSTABLE, BEDS. LU6 3HP

Telephone (0582) 476257/8 Fax (0582) 476258



PRICES INCLUDE VAT AND DELIVERY. ADD £9.00 FOR NEXT DAY DELIVERY

**TONS
OF TIPS
FOR
YOUR
AMIGA**

COMPUTER EXPRESS

FREE!
With issue 144

AMIGA ANSWERS SUPPLEMENT

Workbench release. 2476816 free memory



TECHNICAL TROUBLES?



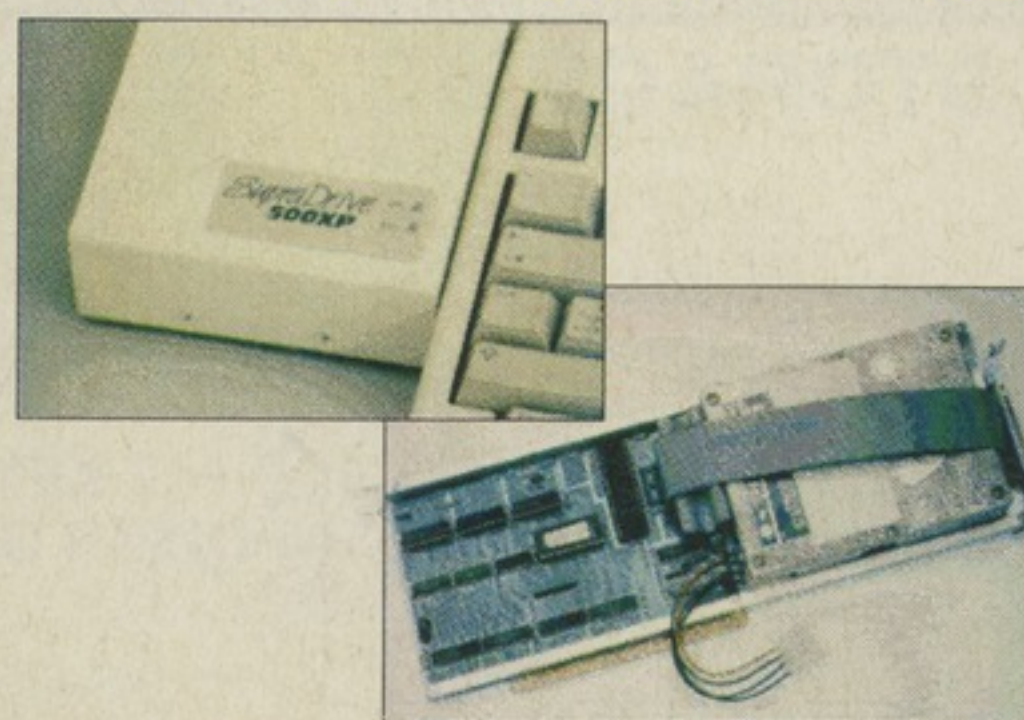
We'll show you how to trounce trouble and get the most from your Amiga

BEGINNERS



Revealed: what kit to buy and how to use it

WIN!



One of two hard drives worth £500

A supplement to
New Computer Express issue 144.
Not to be sold separately

future
PUBLISHING

Your guarantee of value.

COMPUTER MATES LTD

TEL. 0753 631101 (3 Lines)

FAX. As Above



CHEQUES/POSTAL ORDERS TO:
COMPUTER MATES LTD.
PINWOOD STUDIOS
IVER HEATH
BUCKS SL0 0NH



FED UP WAITING?

WE GUARANTEE 48 HOUR
DELIVERY TO YOUR DOOR
AT NO EXTRA COST!!!
WITH 90% OF PARCELS
ARRIVING NEXT DAY!



THE THREE DIAMOND DISKETTES

M-2D

5 1/4" DSDD

1 BOX	£6.00
2-5 BOXES	£5.50
6-10 BOXES	£5.00

M-2HD

5 1/4" DSHD

1 BOX	£8.95
2-5 BOXES	£8.15
6-10 BOXES	£7.60

MF-2DD

3 1/2" DSDD 1MEG

1 BOX	£8.65
2-5 BOXES	£8.15
6-10 BOXES	£7.10

MF-2HD

3 1/2" DSHD 2MEG (1.44)

1 BOX	£15.75
2-5 BOXES	£14.70
6-10 BOXES	£13.65

FREE GIFTS WHEN YOU BUY MITSUBISHI BRANDED DISKETTES!

1 BOX FREE MOUSEMAT 5 BOXES FREE 50 CAP BOX 10 BOXES FREE 100 CAP BOX

COMPUTER MATES — THE FIRST MAIL ORDER SUPPLIER OF MITSUBISHI BRANDED DISKETTES

QUICKSHOT JOYSTICKS

SEGA/ATARI/MSX/
AMSTRAD/COMMODORE

MAVERICK I	£14.50
FLIGHT GRIP	£11.50
PYTHON I	£11.50
STARFIGHTER I	£35.00
<i>(Remote Control/Wireless)</i>	
ATARI/COMMODORE	
APACHE I <i>(Digital)</i>	£9.00
TURBO II	£11.50
APPLE 2E/C, IBM PC	
AT/XT	£14.50

MOUSE MATS	£2.50
MOUSE HOLDERS	£2.00
HEAD CLEANERS 3.5" or 5.25"	£2.00
MINI VACUUM	£6.00
CLEANING SOLUTION	£2.00

3 1/2" MITSUBISHI BULK

LIFETIME GUARANTEED

3 1/2" DSDD		3 1/2" DSHD	
50 DISKS	£18.00	50 DISKS	£32.00
100 DISKS	£35.00	100 DISKS	£63.00
200 DISKS	£68.00	200 DISKS	£125.00
500 DISKS	£152.00	500 DISKS	£295.00
1000 DISKS	£295.00	1000 DISKS	£580.00

INCLUDING LABELS

5 1/4" BULK DISKS

LIFETIME GUARANTEED. PACKED IN 25's INCLUDING LABELS

48 TPI		96 TPI		HIGH DENSITY	
25 DISKS	£8.15	25 DISKS	£8.75	25 DISKS	£13.50
50 DISKS	£15.50	50 DISKS	£16.50	50 DISKS	£25.50
75 DISKS	£21.50	75 DISKS	£23.00	75 DISKS	£37.50
100 DISKS	£27.50	100 DISKS	£28.50	100 DISKS	£46.00

COLOURED DISKS

DSDD WITH LABELS
RED, YELLOW, ORANGE,
GREEN, WHITE

	5 1/4"	3 1/2"
10 DISKS	£4.00	£4.50
25 DISKS	£8.75	£10.75
50 DISKS	£16.50	£21.00
100 DISKS	£28.50	£40.00

14" MONITOR STAND
SWIVEL WITH
HANDY KNOB £13.50

80/132 PRINTER STAND
WITH PAPER TRAY £9.00

A4 DESKTOP
COPYHOLDER £7.50

BLUE BOX PRODUCTS

ALL BLUE BOX PRODUCTS ARE COMPLETELY PACKAGED IN
PRINTED CARDBOARD BOXES WITH LABELS. 100% GUARANTEED.

BAMBI-2DD

25 DSDD 3 1/2" IN 25
CAP STORAGE BOX

1 BOX	£14.00
2+	£13.00
5+	£11.00

MF-2DD 30's

30 DSDD 3 1/2"

1 BOX	£14.00
2+	£13.00
5+	£11.00

MF-2DD 10's

10 3 1/2" DSDD

1 BOX	£6.00
2+	£5.00
5+	£4.50

M-2D 48 TPI 10's

10 DSDD 5 1/4"

1 BOX	£4.25
2+	£3.75
5+	£3.25

M-2DD 96 TPI 10's

10 DSDD 5 1/4"

1 BOX	£4.75
2+	£4.25
5+	£3.75

BAMBI-2HD

25 DSHD 3 1/2" IN 25
CAP STORAGE BOX

1 BOX	£21.00
2+	£20.00
5+	£18.50

MF-2HD 30's

30 DSHD 3 1/2"

1 BOX	£21.00
2+	£20.00
5+	£18.50

MF-2HD 10's

10 3 1/2" DSHD

1 BOX	£8.50
2+	£8.00
5+	£7.00

M-2HD 10's

10 DSHD 5 1/4"

1 BOX	£6.50
2+	£6.00
5+	£5.00

DATA CARTRIDGES

VERBATIM DATA LIFE

DC2000	£17.80
DC300XLP	£17.80
DC600A	£19.60
DC6150	£21.50

STORAGE BOXES

3 1/4"		5 1/2"	
120 CAP	£9.50	140 CAP	£8.75
100 CAP	£7.90	120 CAP	£8.25
80 CAP	£7.50	100 CAP	£7.50
50 CAP	£6.50	50 CAP	£6.50
40 CAP	£6.00		

ALL ABOVE BOXES LOCKABLE + 2 KEYS

£2 OFF BOXES WHEN ORDERING 100 DISKS OR MORE

10 CAP	£1.50	10 CAP	£1.50
5 CAP	£1.15	5 CAP	£1.00
1 CAP	£0.50		

Call SAM or PAT Now!
on 0753 631101

SORRY! SORRY! SORRY!

WE DO NOT PRICE MATCH BUT WE DO GIVE
QUANTITY DISCOUNT, WITH SERVICE, QUALITY
AND BACKING FROM THE LARGEST DISK
MANUFACTURERS IN THE WORLD. IN ADDITION
OVER 200 LINES OF PERIPHERALS IN STOCK. ASK
FOR OUR COLOUR CATALOGUE & PRICE LIST
WITH YOUR ORDER OR SEND 22p S.A.E.

CALL 0753 631101

CONTENTS

Hello, good day and welcome to the *New Computer Express* guide to getting the most out of your Amiga computer.

Put together by our colleagues on sister magazine *Amiga Shopper*, the magazine that's serious about your Amiga, this supplement presents some of the most frequently asked questions on a host of different topics with the aim of helping you discover just what your machine is capable of.

Even if you don't already own an Amiga, this supplement serves as a buyers' guide and there's a handy spread for complete beginners included to give an insight into what's on the market and for how much.

There's even a fantastic competition in which you can win a top-quality hard drive to further expand the capabilities of your computer.

Anyway, that's enough of the introductions - read on dear reader, and enjoy.



Create your own masterpieces on the Amiga

ART **5**
The ins and outs of Amiga art and graphics explored

DTP **7**
How to make the newspaper headlines on a home setup with our desktop publishing hints.

AMIGADOS **10**
Get beyond Workbench and explore the real power of your Amiga that lies behind the Shell.

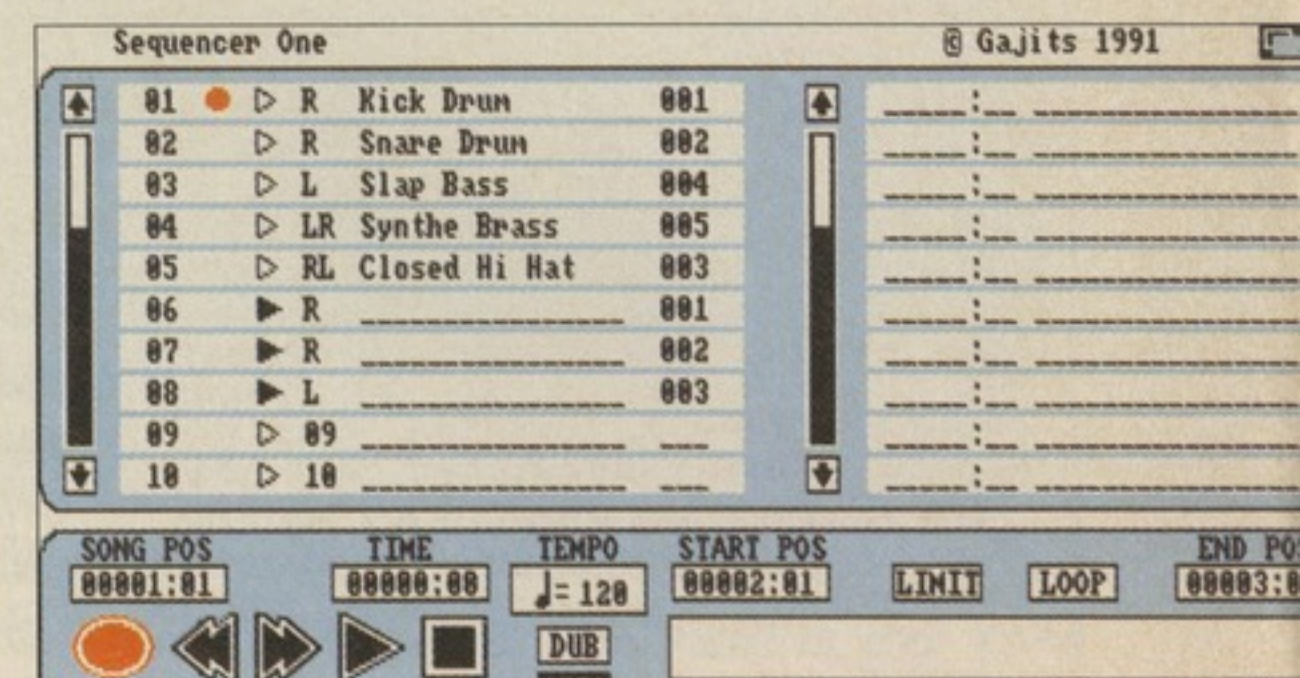


Expand the capabilities of your machine

PROGRAMMING **12**
Why buy everybody else's software when you can write your own.

BEGINNERS **14**
How to gear up, and all the exciting things you can do with your Amiga.

UPGRADING **18**
So you want more? Here's what to do to get it.



Write your own chart-topping single

BUSINESS **22**
Use your Amiga to help run a business.

COMMS **24**
Get in touch with other users and download some free software to boot.

HARDWARE **28**
Peripheral problems perused and busted by the best in the business.

COMPILED BY

Karl Foster
and
Cliff Ramshaw

ART

Amanda Cook

PRODUCTION

Frances Wasem

ADVERTISING

Mike Jennings

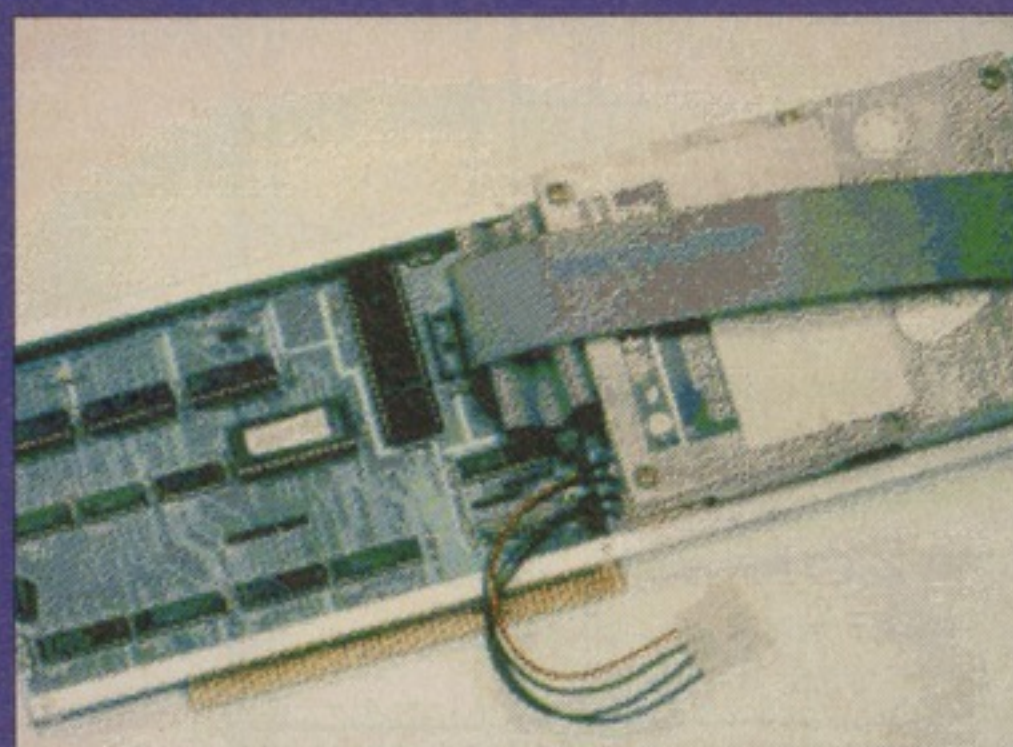


Beauford Court
30 Monmouth Street
Bath BA1 2BW
0225 442244

The Amiga Answers is a supplement to New Computer Express and is not to be sold separately.

COMPETITION

Win a £500 hard drive in our easy competition.



A Wordsync 2000 or Supra 500XP. Which would you choose?

page 30

PICTUREWARE[©]

IS HERE!!!

©N.J.N. Williams 1991

"Extraordinarily high quality...impressively clear images."...*Amiga Shopper*
 "Digitization of the pictures is very impressive".....*New Computer Express*
 "Incredibly Awesome".....*Amiga User International*

Eight Disk Hyperdemonstration! Only £9.90 all in!!

The answer to all your questions! Pictureware's Hyperdemonstration will astonish you. Using Gold Disk's Hyperbook, we have packaged our HAM&IFF demos with two catalogue disks, and a "special" disk with 12 super pictures on it (in IFF). Including the Hyperdemonstration you get eight disks for £9.90 all in! (Plus a disk box!) The Hyperdemonstration requires one meg of memory to run properly, (there's a lot in it!). We can supply a half meg board and Hyperdemonstration for £42.90.

Our most popular Pictureware title include:-

Sunsets Disks 1&2
 Motorbikes Disks 1,2,3 &4
 Compilation Disks 1&2
 The Nude Disks 1&2
 People Disks 1&2
 Hothouse Plants Disks 1,2&3

IFF??

One disk £4.99
 Two+ disks £4.50 each
 Up to five disks £1P&P
 Six+ disks post free



or HAM??

UNBEATABLE VALUE - Specially Preformatted Floppies

-Rock Bottom Price - Includes P&P-

10 Disks £8.50, 20 Disks £16, 30 Disks £23.50

During Pictureware's development we've created pictures in all sizes and formats. We're providing them for your fun and entertainment on SPECIALLY PRE-FORMATTED FLOPPIES. Three sets of ten disks are currently available. No guarantees on this exceptional offer, if you like the pictures use them, if not delete them (much quicker than a disk format), and use the disks as blank floppies!!!

ASK ABOUT OUR HIGH QUALITY DIGITIZING SERVICE!
 £5 per picture, including disk. 10% discount for 5+ pictures.

Orders by post to:- **Nik Williams Broadcast**,
 Dept NCE, Aspect House, 21 Brynmill
 Crescent, Brynmill, Swansea, SA2 0AL.
 Orders normally dispatched same day
 24Hr Credit Card Phone/FAX Hotline
 0792 645946

Visa, Access
 Cheques, PO's
 No cash please

ONLY AVAILABLE FROM
**NIK WILLIAMS
 BROADCAST**
 0792 470503

(When ordering by telephone please wait for FAX tone to finish, at which point you'll be connected to our telephone system.)

THE AMIGA SPECIALISTS

Is your A590 full?

A590 drive upgrades from £199

43Mb to 300Mb replacement drives

Hard disks, software, memory expansions, monitors, floppy drives, controller cards, accelerators, digitizers, monitors, scanners, flicker fixers, CD-Rom, printers, optical drives, ram chips, sound samplers, tapestreamers, SCSI drives, fatter agnus chips, custom programming.

No one knows the Amiga better.

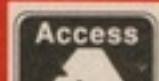
Almathera Systems Ltd,
 Challenge House,
 616 Mitcham Rd, Croydon,
 CR9 3AU
 Tel: 081 683 6418
 Fax: 081 689 8927

RUTLAND COMPUTER SUPPLIES LTD

**30 Buckminster Close,
 Melton Mowbray,
 Leics, LE13 1ET.
 Collections welcome.
 Please ring first.**



OFFICE HOURS



**9.00am to 7pm Monday to Friday
 10.00am to 12 noon Saturdays
 PHONE & FAX NO 0664 500878**

**All prices include 17½ VAT
 Post and Packing ..£3.50
 3 Day Courier£6.50
 Overnight£8.00**

**★ LASER PRODUCTS ★
 AVAILABLE**

**Any orders over £100 are sent
 by courier for just £4.50 !
 (Published Prices Only)**

**All orders are despatched
 within 24 hours
 subject to stock availability**

TOP QUALITY UNBRANDED DISKS AT DISCOUNT PRICES

3.5 DSDD Disks inc labels39p each
 3.5 DSDD Coloured Disks inc labels45p each
 3.5 DSHD Disks inc labels99p each

5.25 DSDD Disks.....25p each
 5.25 DSDD Coloured Disks39p each
 5.25 DSHD Disks49p each

All Disks are Guaranteed 100% Error Free

Packed with sleeves, Labels + W/P Tabs

STORAGE BOXES LOCKABLE, ANTI STATIC WITH DIVIDERS AND KEYS

3.5" BOXES
 40 Capacity.....4.60
 80 Capacity.....5.10
 100 Capacity.....6.10
 120 Capacity.....7.10

5.25" BOXES
 50 Capacity.....4.60
 110 Capacity.....5.20
 120 Capacity.....6.50

Cables

IBM PC Cables 1.8m Long.....6.15
 Centronics To Centronics Cable 1.8m9.50
 2 Meter Joystick Extension Cable4.95
 RS232 Male - Male, Female - Female, Male - Female 8.50
 Joystick/Mouse Extension Cable3.95

Banx Boxes to hold 80 3.5 disks..... 9.95
 Posso Boxes to hold 150 3.5 disks ... 15.30
 Posso Boxes to hold 70 5.25 disks ... 15.30

WE CAN SUPPLY CABLES MADE TO ORDER PLEASE RING FOR A QUOTE

Computer Stationary
 Listing Paper 11" x 9.5" 60gsm 2000 sheets17.00
 11" x 9.5" 80gsm 2000 sheets20.00
 A4 70gsm 2000 sheets19.00

QUALITY COMPATIBLE RIBBONS

ORIGINALS AVAILABLE
 ON REQUEST

MAKE	GP	1+	5+
AMSTRAD LQ3500/8256	2741FN	3.15	2.50
9512	2746FN	2.90	2.35
DMP2000/3000	2482FN	2.66	2.10
BROTHER M1009	2412FN	3.60	2.85
M1509	2479FN	5.00	3.95
CANON 1156	2223FN	3.55	2.80
CITIZEN 120	2488FN	3.10	2.45
CITIZEN SWIFT 24	2939FN	3.90	3.10
SWIFT 24 COLOUR	ORIGINAL	17.00	16.00
EPSON EX800	2774FN	3.35	2.95
FX800/LX800/			
MX/FX80	2273FN	2.95	2.35
MX100	2320FN	3.30	2.60
LX80/LX86	2454FN	2.15	1.70
LQ800	2477FN	3.10	2.75
LQ1000/1050	2478DN	3.70	2.90

MAKE	GP	1+	5+
LQ2500	2795DN	4.05	3.20
LQ2550	2877DN	4.05	3.20
NEC P2200(+)	2844FN	3.30	2.60
OLIVETTI DM1/200	2843FN	3.65	3.25
DM105	2863FN	4.75	4.35
PANASONIC KXP110	2228FN	2.95	2.35
KXP1124	2904FN	2.95	2.35
KXP1081	2904FN	2.95	2.35
STAR LC10	2861FN	2.65	2.30
LC10 COLOUR	2861COL	5.00	4.60
LC24-10	2868FN	4.10	3.25
LC24 10 COLOUR	ORIGINAL	12.50	11.80
LC200	ORIGINAL	6.40	6.00
LC24 200	ORIGINAL	9.00	8.00
LC24 200 COLOUR	ORIGINAL	12.50	11.80
LC200 COLOUR	ORIGINAL	12.00	11.00

**THIS IS JUST A SMALL SELECTION OF RIBBONS
 IF YOUR PRINTER IS NOT LISTED - PLEASE RING FOR A PRICE**

The art of the matter

The Amiga has the reputation of being the computer for low-cost graphics applications. There's also more music software becoming available for it. From simple drawings to complex animation with soundtrack, there's a wealth of creative opportunities just waiting for you.

Be you a budding Van Gogh or Walt Disney, the creative possibilities of the Amiga are huge. Here are a few...

Q

Video drone

An Amiga-owning friend of mine recently threatened me with the holiday footage he'd taken on his video camera. I agreed to suffer his inane video doodlings, but was surprised to see that he'd dubbed lots of nice titles all over the images. He waffled on unintelligibly about his genlock. Can you explain this marvellous tool?

A

A genlock is a device that takes the incoming signal from your video camera or recorder and makes it compatible with a computer generated signal. Both signals can then be combined and manipulated to produce seriously un-tedious results. In your friend's case, the computer handled the titling and the video camera suffered the original video footage. Genlocks come in a variety of shapes, sizes and prices, but

expect to pay up to £1,000 for a good domestic model and an arm and a leg for the professional, broadcast-quality type.

Q

Moving pictures

I use *Deluxe Paint III* a lot for pictures and small animations. I use an Amiga 500 with an extra 512k memory expansion. I decided it would be better to have a fat Agnus chip fitted, so I could have bigger and better pictures and animations, but after getting my Amiga back from the repair centre, I booted up *DPaint III* and found all the animation options in the menus were ghosted out. Is this a bug in *Dpaint*, or a hardware fault?

A

Neither, I'm afraid. To use animation, you are simply going to need more memory. By getting the fat



There's no need to monkey about with other machines when quality graphical images such as this are possible on the Amiga.

Agnus modification, you have turned all your Amiga's memory into chip RAM. The animation facilities need a certain amount of fast RAM to do their thing. That's life.

Q

Let it roll

I want to use my Amiga to create animated films. I've got all the software I need to draw and move them, but what sort of hardware is necessary. Am I going to need a flash video to record them?

A

It all rather depends on the sort of animations you have in mind. There are many PD short cartoons which you can run there and then on an Amiga. If you have something like this in mind, then any video recorder will do the job. You simply play the animation and record it. However, the picture quality from the modulator is unlikely to be very impressive: a genlock will greatly improve things.

If, on the other hand, you want to produce longer animations, or more complex ones where there is a lot of movement from frame to frame, you are going to need something more expensive. The problem is that the Amiga cannot display something like this in real time - it has to load bits in from disk every

now and again, and so it can't all be recorded in one go. To make animations like this you are going to need a video with a perfect freeze frame and the Sony 9-pin protocol, and a package like *Simpatika* (around £2000) to control the video as animation frames are sent to it.

Q

In sequence

As a performing musician, I'm looking into the possibility of controlling a synthesiser via my Amiga. I know I'll need a MIDI interface, but what software would you recommend for writing the music in?

A

The Amiga is perfectly capable of this sort of thing, but the software world has not caught up yet. There are some good programs around, but the level of integration between the programs is still lacking.

Pro 24 by Steinberg is a good sequencer package, but it falls down on the notation side of things. Probably the most comprehensive score editing program is *Copyist Professional*, by Dr T. You are still going to need a decent sequencer, so you could try Dr T's KCS. This is a robust program that should serve you well on stage. ■

JARGON BUSTING

ANIM: A method of storing animation frames developed by SpartaFilm, whereby only the changes between successive frames are stored, thus saving significant amounts of space.

CHIP RAM: This is the area of the Amiga's memory directly accessible by the custom graphics and sound chips. Originally 512k, newer machines fitted with the fatter Agnus graphics chip can access 1Mb, allowing smoother animations and more screens to be displayed at once. The Amiga 3000 comes with an Agnus chip capable of addressing 2Mb of chip RAM.

FAST RAM: Any extra memory which is not chip RAM. The custom chips cannot access it, and because such accesses to chip RAM can block out the central processor and slow down its own accesses, fast RAM is faster.

GENLOCK: A way of slaving one video source (eg Amiga) to another (eg video tape) in order to synchronise their signals to allow stable wipes, mixes and other effects.

Mould the front page

Certainly, a very popular use of the Amiga is for desktop publishing. Here's a selection of off'voiced queries...

JARGON BUSTING

ASCENDER: The part of the letter that rises above the main body, as in the letters b, d, f.

BASELINE: The imaginary line upon which the bases of all letters without descenders sit.

BODY TEXT: The main text of the document, excluding headlines.

COCK-UP: Initial letter set in a larger type than the body text and rising above the surrounding letters. Also known as a raised capital.

DESCENDERS: The part a letter which is below the baseline. The letters g, j, p have descenders.

DPI: Dots Per Inch – a method of measuring the resolution of scanners, printers et al. The more dots across or down a page per inch a scanner can recognise, the higher its resolution.

HALFTONE: Any picture reproduced as a series of tones, such as a photograph, as opposed to graphics which are strictly black-and-white.

JAGGIES: The jagged edges seen on diagonal lines, caused by the use of small, but nonetheless finite, rectangular pixels to make up a picture.

Q
Take a memo
In my place of work I have to produce a number of information sheets and notices for internal distribution, so I want to purchase a good DTP setup. I've heard that the Amiga 2000 could be a cost-effective option.

A
You've certainly heard correctly that the Amiga 2000 is cost effective – you should be able to pick up one with monitor, hard drive and software for around £1,500 (ex VAT).

As for output, you'd do well to go for a DTP package that supports AGFA/Compugraphic fonts. These really are the biz and their quality is only limited by the quality of your printer. One DTP package that supports these and that many people rate very highly is Gold Disk's *Professional Page 2*, available from HB Marketing ☎ 0753 686 000.

Q
All tied up
I'm going to use my Amiga for producing a tie and cravat users' magazine. I'll need some DTP software and a decent printer, but how can I get pictures of paisley patterns on to the pages?

A
Well, the cheapest route is to use a hand scanner. These useful little things can be moved across a drawing or photograph and they will digitise all the information and send it to your Amiga. There are now several hand scanners on the market, all around the £150-£200 range. Most also come with software that will take the scanned

images and let you edit them to your heart's content. After that you can put them through a good paint package for re-touching before passing them along to your DTP package for putting on the page.

Unfortunately, hand scanners only give black and white or grey scale images. If you want to scan in colour pictures, you will need an A4 flatbed scanner. These are professional pieces of gear and expensive (the cheapest is in the region of £700).

Q
WOB problem
I'm using *Professional Page 1.3*, but I'm having trouble getting boxes with white lettering on a black background. How is it done?

A
The first step in making a WOB (white-on-black) is to make a black box on your page. To do this, go to the Box menu, select Alter and then Active and click with the mouse to switch the Frame gadget on. Then, from the Draw menu go to Fill Pattern and select the solid black rectangle. After this you need to go to the Color menu, choosing Fill Colour and Black. Et Voila! A black box.

Entering text in the box is exactly the same as anywhere else: click on the text tool and then click inside the box. Before typing, select all your options as normal (point size, typeface and so on). Then select the colour of the text by going into the Color Menu, selecting Ink Color and White. Start typing and you have a WOB.

Q
Setting out
What sort of hardware do you recommend for a desk-

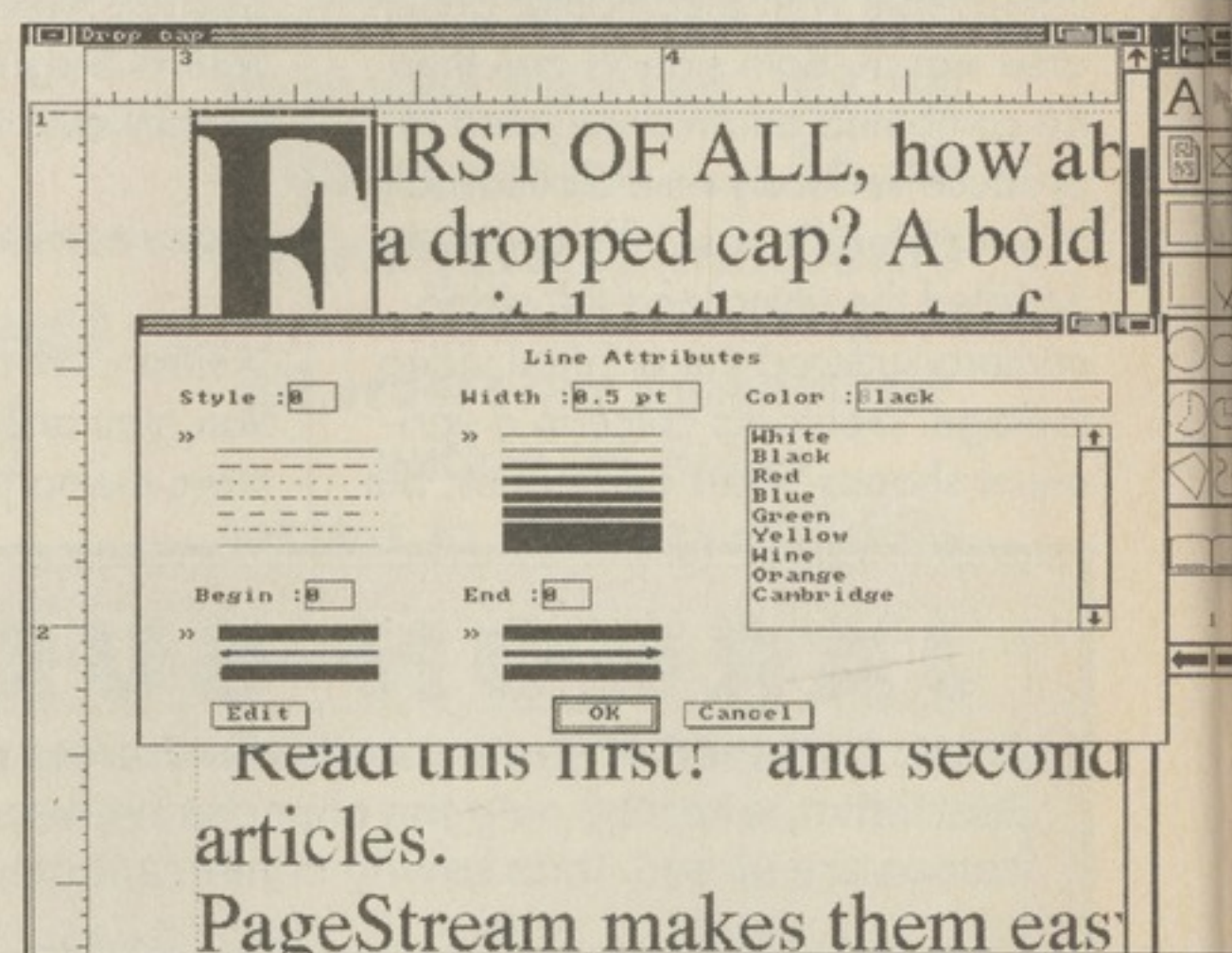
The Amiga is right at the forefront of home publishing. From simple parish newsletters to full magazines; all is possible with an Amiga, some DTP software and a good printer. Even high-street DTP bureaux are beginning to lay on repro facilities for Amiga-owning publishers.

top publishing system? I don't want to waste money on things I don't need.

A
First off, you will need a computer. The Amiga 1500 is probably your best bet, since it comes with two disk drives (a must) and is easily expandable. You will probably need at least another 1Mb of RAM, possibly more. This can be bought on a card and easily slotted into the A1500. Removing five screws is the most painful part of the operation.

If you are serious about DTP, then you are going to need a hard disk. Pages take up an awful lot of memory and you will need an efficient way of storing them. Hard disks are fast and have a large capacity. A 40Mb drive should do the trick. Again, these are available as plug in cards.

Of course, you will also need a printer. Unfortunately, a dot matrix printer simply will not give good quality results. Output from an



There are many DTP packages for the Amiga that are capable of giving professional results.

ink jet printer looks much better, but a laser printer must be your ultimate goal. Check out our Expansion guide for more details.

All of this will give you a good DTP system. It will be a little slow, however. A plug in accelerator card should help. It takes over from the Amiga's 68000 processor, replacing it with a much faster and much more powerful 68030 or 68040 chip. ■

Cracking the Shell

Using the Shell is a great way of discovering the real power of the Amiga's operating system, but it can be a little confusing at first...

Behind the Amiga's graphics interface lies the Shell, also known as the Command Line Interface (CLI). Using this, it is possible to do much more than copy and format disks. It is an area in which the Amiga is powerful, but few people venture in. A beginner can soon be taking more control over the Amiga and writing programs from the Shell.

Q
File information
What function does a file with '.info' after it serve?

A
Each .info files corresponds to another file of the same name and contains information for Workbench about the files. This includes the position of the icon in the window. If you're unhappy with where an icon appears when its

is read after the Amiga is reset. A virus duplicates itself by loading into memory when an infected disk is placed in the Amiga. After this it hides away waiting for another disk to be inserted. Whenever this happens, the virus copies itself to the new disk.

As well as spreading itself, a virus is likely to cause some sort of damage. This usually involves crashing the machine after printing up a silly message. More harmfully, viruses can erase or corrupt data stored on any disks that you care to

put in your Amiga. It is important to remember, though, that they cannot in any way damage your Amiga.

Switching the Amiga off between disk changes ensures that any resident viruses will be destroyed before they get a chance to replicate. They cannot stay in

ask you if you want to install the disk. This means that it will write a standard AmigaDOS bootblock onto the disk in the place of the old one. Doing this to a game will make the game unplayable. For this reason it is a good idea to copy the disk before you let a virus killer do anything irreversible to it.

Q
RAM jam
I'm having trouble creating a RAM disk on a bootable disk and getting the Shell on to it. After copying Shell, the Amiga asks me for a disk called NEWCON. I found MOUNT NEWCON: in the Startup sequence, so copied the CLI command MOUNT to my C directory, but it didn't work. Is the machine out to get me?

A
Getting a RAM disk and Shell onto a bootable disk takes more than what you've tried so far.
The way to do it is to create

two directories, called L and DEVS. Copy the files Ram-handler, Shell-seg and Newcon-handler to the L directory, then copy the MountList file to the DEVS directory of your bootable disk. All these files can be found in the L and DEVS directories on your Workbench disk.

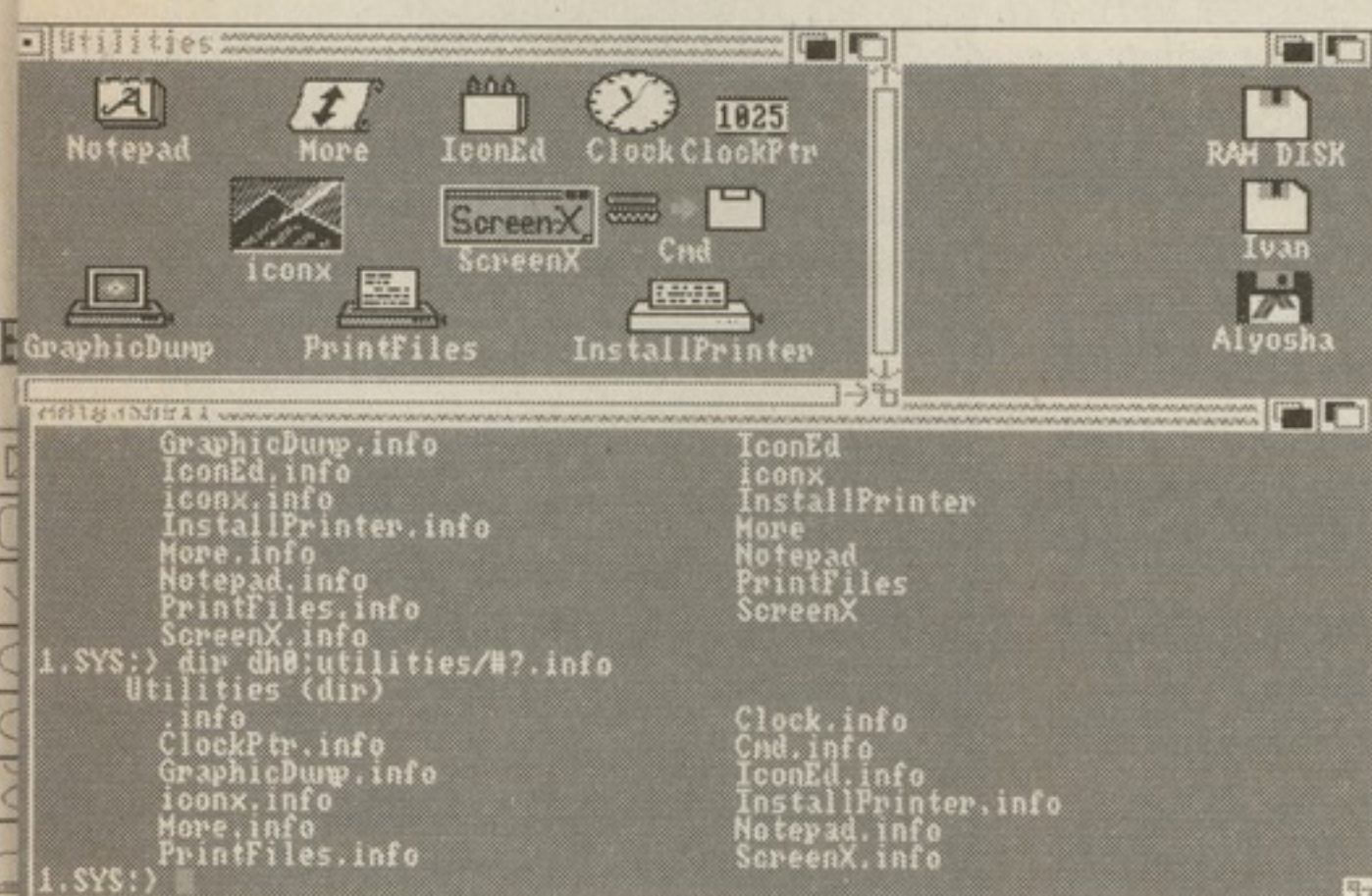
If you do all of that, your RAM disk and Shell should all work in a hunky dory fashion.

Q
The final frontier
I do quite a lot of programming on my Amiga and often need to know how much space I've got left on a disk in the drive.

A
Are there any utilities available in the public domain that I can run alongside my compiler that will give me this information?

There may well be, but you don't actually need it as you have already got the facility on your workbench disk.

All Amiga Workbench disks have a CLI command called INFO which, when you type INFO in and press return, will tell you the precise amount of space used and what is available on all your drives. ■



The Shell opens up as a window in which you can see files corresponding to the icons above.

window is opened, use the mouse to move it to where you prefer and move to the 'Special' menu at the top of the Workbench screen. Select 'Snapshot' and it will remember the new position of the icon.

Q
Virus vaccination
Can you explain to me what computer viruses are?

A
Viruses come on disks, either hidden as a file or in the part of the disk known as the bootblock – the part of an autobooting disk which

memory with no power. Neither can a virus copy itself onto a disk that has its write protect tab open.

Because constantly switching on and off is a drastic step to take, it is a good idea to get a virus hunter/killer from the public domain. These recognise most (but not all) viruses and will remove them from disks or memory.

A word of warning here, though. Virus checkers look at the bootblock of a disk, and if they see one they don't recognise then they assume that there is a virus there. However, most games and some PD programs come on disks with non-standard bootblocks. On seeing one of these, a virus killer will

JARGON BUSTING

BOOTBLOCK: The first two sectors of an AmigaDOS disk located at track 1, side 0. The bootblock is used to describe the filing system in use and can contain a special program to 'boot' (load and execute from a reset) certain disks. This is how most simple viruses get into the system.

CLI: Command Line Interface – a program that provides a window into which AmigaDOS commands can be typed. Also known as the Shell, although the Shell offers a number of additional facilities over the CLI.

DEVS: This is a directory on the Workbench disk that contains the 'device drivers' for various Amiga peripherals, such as printers.

Writing it right

Delving into the nitty gritty of programming is a rewarding, if frustrating business. Here are some common queries...

Q

Extra trouble

Whenever I try and save a program from *AmigaBasic*, it gets saved on the Extras disk. How can I save it to a disk of my own choosing?

A

Before selecting 'save' from the menu, take out the Extras disk and put in your own. Now select 'save'. When typing the name of the program you want it saved under, prefix the name with 'df0:'. This instructs the computer to save it on

When it comes to programming, the things you can do with the Amiga are limited only by your imagination. Games, utilities or serious applications are all possible. There are many languages you can program in - the most common on the Amiga are Basic (for beginners), C (more advanced) and assembler (real professional stuff)

the disk currently in your floppy drive. The line looks like this:

```
df0:SuperDuperHyperInvaders
```

And that should do it.

Q

Picture this

I want to be able to use graphics in my assembler programs. I have *DPaint II*, but I don't know how to convert the images from IFF files to the required format.

A

You need a utility to convert IFF files to RAW format - a simple kind of picture file. What you should do is use the Devpac directive INCBIN, then RAW graphics data can be

included in the program. There are several utilities for this available in the public domain.

Q

Inner vision

Can I use *AmigaDOS* commands from within a Basic program? I need to use the 'list' command so I can see the length of each file in a directory.

A

To make a call to the operating system you must use the DOS library. *AmigaBasic* communicates with this (and other) libraries by means of a .bmap file. This has to be created from an FD file called 'dos_lib.fd' which is held in the FD1.3 directory of the Extras disk. The program 'convertFD' in the BasicDemos drawer of the Extras disk will take 'dos_lib.fd' and produce a file called 'dos.bmap'. This resultant file should be placed in the libs: directory of your Workbench disk.

This .bmap file contains information to allow Basic access to the various DOS commands. The library routine you require is 'Execute', via which you access *AmigaDOS* commands stored in Workbench's C directory. This is done in Basic as follows:

```
DECLARE FUNCTION Execute& LIBRARY
LIBRARY "dos.library"
x=Execute&(SADD("list"+CHR$(0)),0,0)
LIBRARY CLOSE
```

This method will only work if *Amiga Basic* is run from the Shell or CLI. Click on the Shell icon, then type the following (including the quotes):

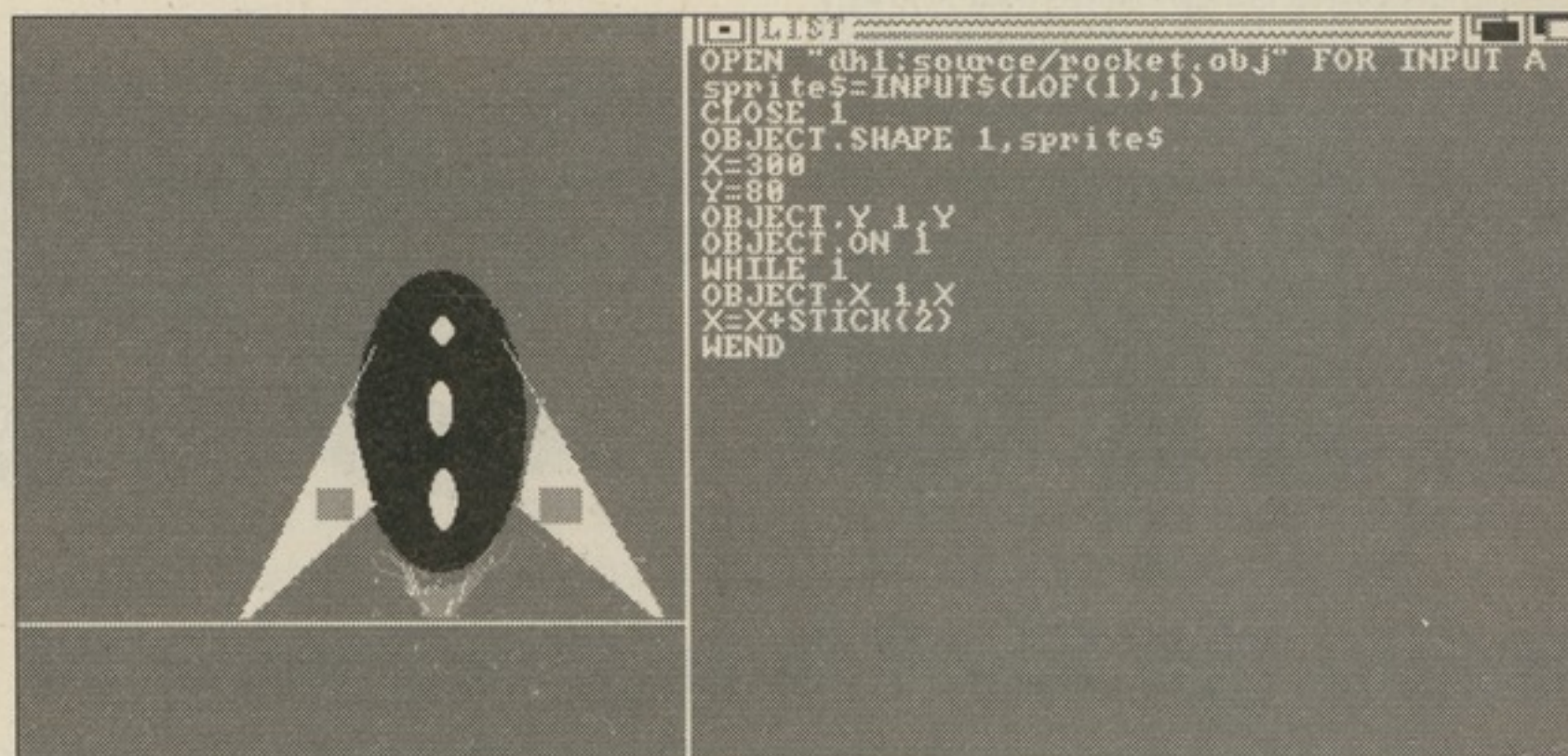
```
"Extras 1.3:AmigaBasic"
```

and Basic will load as normal.

Q

Alien fries

I want to write a 'fry-the-aliens' game in *AmigaBasic* and then move up to something more powerful, but I don't understand how the



sprite commands work. I want the player's gun moving left and right across the bottom of the screen using the joystick, but don't know where to start.

A

Assuming you've designed your sprite in the Object Editor and saved it on the root directory of your program disk, the first task for the program is to open the file in which the sprite is saved and read in the data. This is done with Basic OPEN and INPUT\$ statements.

This data is assigned to a sprite with the OBJECT.SHAPE statement. The position of the sprite on the screen has to be remembered, so two variables, X and Y, are needed to do this. The sprite can be switched on by the OBJECT.ON statement, and moved around with the OBJECT.X and OBJECT.Y statements. Bear in mind that each sprite in *Amiga Basic* is given a number, so you can have several at once.

The final stage is to set up a simple loop in which the joystick is continually read with the STICK function. If need be, the X variable is increased or decreased to move the sprite around the screen. The listing looks like this:

```
OPEN "df0:invader.obj" FOR
INPUT AS 1
sprite$=INPUT$(LOF(1),1)
CLOSE 1
OBJECT.SHAPE 1,sprite$
X=300
Y=150
OBJECT.Y 1,Y
OBJECT.ON 1
WHILE 1
  OBJECT.X 1,X
  X=X+STICK(2)
WEND
```

This assumes that the joystick is plugged into mouse port 2. As for writing the rest of the game, well that could well get a little more complicated... ■

A simple sprite, such as the one above, can be manipulated easily from a high-level language such as *AmigaBasic*. In assembler it would be a complex process, but would result in smoother movement.

JARGON BUSTING

ASSEMBLER: is a program which converts an assembly language program written in words (well, almost) into the machine code numbers that the Amiga's 68000 processor understands. Writing programs in assembly language ensures that the best possible speed and memory efficiency is gained from the machine.

BMAP: A .bmap file contains information that *AmigaBasic* needs for interfacing to the Amiga's internal library routines.

FD: Like the .bmap files, the FD (Function Description) files contain interfacing information for the library routines. FD files have to be converted into .bmap format before they can be used by *AmigaBasic*.

IFF: Interchange File Format is a means by which data from different graphics or sound sampling programs are saved in a compatible way. It allows data to be exchanged between programs very easily and avoids the situation on, say, the PC where dozens of different graphics packages each save data in incompatible formats and so files cannot be interchanged.

NEW AGE COMPUTING

For all your Amiga & communication needs!

AMIGA 500 DEALS

Before you buy an Amiga from someone else check:
As well as the standard pack, does it have

- * A free mouse mat
- * A free disk head cleaning kit
- * 15 professionally packed public domain disks
- * A complimentary issue of Computer Lynx (See below)?
No? Well ours do! Check us out first...

CARTOON CLASSICS

1 Meg £375

SCREEN GEMS

1 Meg £365

HARD DRIVE OPTIONS

A1500/2000

GVP OR XETEC SCSI HD
controller with 8 meg RAM
Upgrade option on board.

Card (OK) state GVP/XETEC...£199.99
Card + 52 meg drive.....£429.95
Card + 105 meg drive.....£581.95
Card + 170 meg drive.....£787.95
2 meg RAM.....£79.00
4 meg RAM.....£157.50
8 meg RAM.....£314.00

A500

Commodore A590 controller,
2 meg ram option on board.

A590 + 20 meg drive£285.95
A590 + 52 meg drive£489.95
A590 + 105 meg drive£645.95
A590 + 170 meg drive.....£855.95
2 meg RAM£70.00
All ram only sold when bought with
drive bundle.

BULK DISKS

Benchmark branded buld disks + labels

25	50	100	500
£16.00	£28.00	£40.00	£162

PREFORMATTED

We can now even FORMAT the disks for you!

25	50	100	500
£17.25	£30.50	£45.00	£185

3.5" DISK STORAGE

40 Capacity lockable box£4.50
80 Capacity lockable box£5.50

POSSO 150 Capacity drawer£17.00
BANX 90 Capacity drawer£9.00

* Order ANY 3 boxes and get 10 disks FREE *

A500 0.5 MEG MEMORY UPGRADE

Expansions without a clock are just a waste of time!

With Clock Just £26.99

SLIMLINE 3.5" AMIGA DRIVES

With throughport, switch & FREE computer & Lynx disk!

Only £55.00

TURBO 68000 7/14 MHz

SWITCHABLE CHIP

Complete with board, manual and software

Only £39.99

Revision 5.2 + Amiga needed. If in doubt CALL first.

REPLACEMENT MICE

280 dpi - mouse mat & holder included

Now contains £10 of software vouchers and free copy of
operation stealth

Naksha Mouse.....£23.00

PROFESSIONAL PUBLIC DOMAIN!

- as featured in NEW COMPUTER EXPRESS.

Large range of PACKAGED public domain software
available to give that little edge...Call/write for a list now!

COMPUTER LYNX - The Amiga disk magazine

The action packed magazine ON A DISK!

Demos, news, interviews, reviews and more!

WE CAN'T EXPLAIN IT HERE! - SEND FOR A TASTER!

Exclusive from NEW AGE only £1.50

MOUSE MATS

VINYL.....£1.99 FOAM.....£2.99

PRINTER STANDS

UNIVERSAL.....£6.99 WIRE.....£9.99

DUST COVERS

A500.....£4.50 STAR LC-10.....£5.50

PRINTER RIBBONS

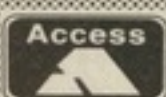
Star LC-10.....£3.00 Star LC24-10/24-200 ..£4.50

Epson MX/FX80/800 ..£3.50 Epson LX80/86£3.00

Panasonic KXP1124...£4.75 KXP 1080/1081/1180..£4.50

Call for your printer NOW!

POSTAGE AND PACKING: Please add 50p for orders under £2.00,
£1.50 for orders up to £10, and £2.00 for all orders above.



ALL PRICES INCLUDE V.A.T. Payments payable to "NEW AGE COMPUTING"



Dept NCE, 187 Perrysfield Road, Cheshunt, Herts, EN8 0TL
Telephone (0992) 465366 / (0831) 820097. Fax: (0992) 450009

Welcome to the

Okay, so you've never owned an Amiga, but everybody seems to be getting into them these days. You think it's about time you did too. So what exactly can they do? Read on...

A computer does what it is told. Slightly more experienced users might balk at this statement: their computer never does what it's told. Actually, it does, but computers are very literal-minded beasts. If you make a typing mistake, or tell it to do something silly, it will try and do just that rather than attempting to make any sense of what you said (typed or moused usually).

The situation is complicated somewhat because somebody has already told your computer to do lots of things before leaving the factory. These instructions are called programs. They live in the computer's memory. Some are stored in a part of memory known as ROM (standing for Read Only Memory, because it can't be altered). Programs stay in ROM even when the machine is switched off. These programs make up the central part of what is called the operating system. This is the bit that tells the computer how to behave on a very basic level. Amongst other things, it translates information from the keyboard or mouse

into a form that the computer can understand, and translates information stored inside the computer into words and pictures that you can understand (hopefully).

The other kind of memory is called RAM (short for Random Access Memory, because any part of it can be accessed randomly - at once without having to wade through the whole lot to get to the interesting bit). The contents of RAM are lost when the power is turned off. Information and programs that do interesting things live in RAM. These can either be typed in directly at the keyboard (yawn), or taken in from a disk by a process known as loading. In fact, in the case of the Amiga the more advanced parts of the operating system (known as 'Workbench') are loaded from disk every time the machine is switched on.

Programs, basically, are the key to what a computer can do. They make the computing machinery operate in a useful way: drawing pictures, carrying out mathematical calculations, formatting text and so on.

the screen. Once it is above the icon of the desired program, a couple of presses of the left mouse button will set the program into action. More complex options can be taken by the means of Menus. A Menu is displayed by moving the pointer to the top of the screen and pressing the right mouse button. Moving the pointer down the list of supplied options will highlight each one in turn. Releasing the mouse button when one of these options is highlighted will select that option. Using an Amiga can be as easy as that. The keyboard need hardly ever be used.

Q

Why buy?

So what's the point of buying an Amiga instead of another type of computer?

A

Although programs are the key to a computer's usefulness, they need the basic materials to work with, the machinery or 'hardware' as us knowledgeable types call it. In

short, the Amiga has some of the best hardware available this side of bankruptcy.

I could waffle on about 16 bits and Bobs and multi-tasking and god knows what else, but suffice to say that the Amiga has excellent sound, graphics and animation potential, it allows more than one programming to be running at the same time and has one of those fashionable WIMP interfaces.

WIMP is an elegant, easy to use means of communicating with

the computer. It stands for Windows Icons Menus Pointer and the Amiga's WIMP interface is called Workbench.

The way it works is this: disks in the disk drive and programs on those disks are represented as little pictures or icons. Connected programs are displayed next to each other in outlined areas on the screen - Windows. If you want one of these programs to run, you move the mouse on your desk and a corresponding Pointer moves across

Q

What's the diff?

But why are there so many types of Amiga around. What's the difference between them?

A

There are five basic models: the A500, A1000, A1500, A2000 and A3000. The A1000 was the first version to be commercially available. In terms of specification, it comes somewhere between the A500 and the A2000. It is a little old-fashioned now, and is no longer on sale.

The A500 is by the most popular of the Amigas. It is aimed squarely at the home user, as can be seen by its spaceship-like

The art of pixel-punishing performance

Paint packages such as *Deluxe Paint II* (often given free with an A500) enable you to draw directly to the screen in glowing colour. A number of different brush styles and sizes can be chosen, plus geometrical shapes (circles, boxes) and you can even take a section of the screen as a brush, bend, twist and resize it and place it back on the screen in as many positions as you like.

More sophisticated packages - *Deluxe Paint III* and the *Disney Animation Studio* are good examples - can be used to take these pictures and turn them into cartoons. This has become something of a speciality for the Amiga.

An even livelier art application, though not painting in the strictest sense, can be had with packages such as *Real 3D*. It will help you design a scene of three dimensional objects (each made up of a collection of simple geometrical shapes), decide where you want to place a light source for realistic light reflections and let the Amiga get on with it. Some time later (usually a quite a while as such things take a lot of processing power) the Amiga will produce a stunning picture with all the objects drawn in perspective, with shadows, highlights and reflections.

There are plenty of packages on the market that will help you create stunning visual images.

machine

contours and the inclusion of its keyboard, computer and disk drive all in the same box. It comes with 512k of memory which means that it can hold around 512,000 letters of the alphabet at once, or around 100,000 words. This is only in theory: in practice much of this memory is used in the Amiga's general running, not to mention the display of graphics screens.

The A2000 was originally intended as the A500's big brother. They are essentially the same machine, but the A2000 has all its clever bits in one box (on top of which goes a monitor or TV) with a keyboard and mouse being attached to it via leads. The A2000 also has 1Mb of memory – twice that of the A500. Its casing is much bigger, principally because it has lots of room inside for extra bits to be added (see the Expansion spread for more details). This was once seen as its main advantage over the A500, but innovative third-party manufacturers have since shown that anything the A2000 can do, the A500 can do too. For those intending to hang lots of add-ons for specialist applications, it's probably a good idea to go for an A2000 or A1500; otherwise an A500 should be able to handle the expansion demands of the more modest user.

Something of a dark horse, the A1500 is seemingly part of an experiment by Commodore UK. Outside, it looks the same as an A2000. Open the box up and you will find that inside it looks the same as an A2000 as well. The only difference is a label on the front of the machine and the way the machines are sold. The A2000 usually comes with a single floppy drive and a hard disk drive (a hard disk is like a floppy but much faster and able to hold much more information); the A1500 comes with two floppy drives – a hard disk must be bought separately.

The A3000 is the new addition to the Amiga range. Whereas all the other Amigas use a chip called the 68000 to do all the clever computer bits, the A3000 uses a 68030 chip, which is bigger, better and faster than the 68000.

All of the Amigas have special graphics chips to help them do all of the amazing things that make them better than other computers – the A3000 has a much more powerful graphic chip set than any of the other Amigas. It also has a lot more memory and a bigger hard

disk drive, and is basically much much more wonderful.

Q

What's to do?

Having got an Amiga, what can I do with it?

A

Lot's of things. There are two ways of looking at a computer: either as an end in itself or as a tool to do a specific job.

Many people are quite happy to sit at home and mess around with their computer, finding out exactly what they can do with it. They may even decide that they want to learn how to program the thing. It may be hard work, but it can be fun and rewarding, too.

The beauty of the Amiga is that it can help people do things that they never imagined they could do. Thousands of supposedly uncreative types are beaver away at this very moment, making cartoons, drawing pictures and writing tunes.

The key to using the Amiga as a tool is in getting hold of the right software – the programs that will tell the computer how to do the job at hand. Here are some examples of what the Amiga is best at:

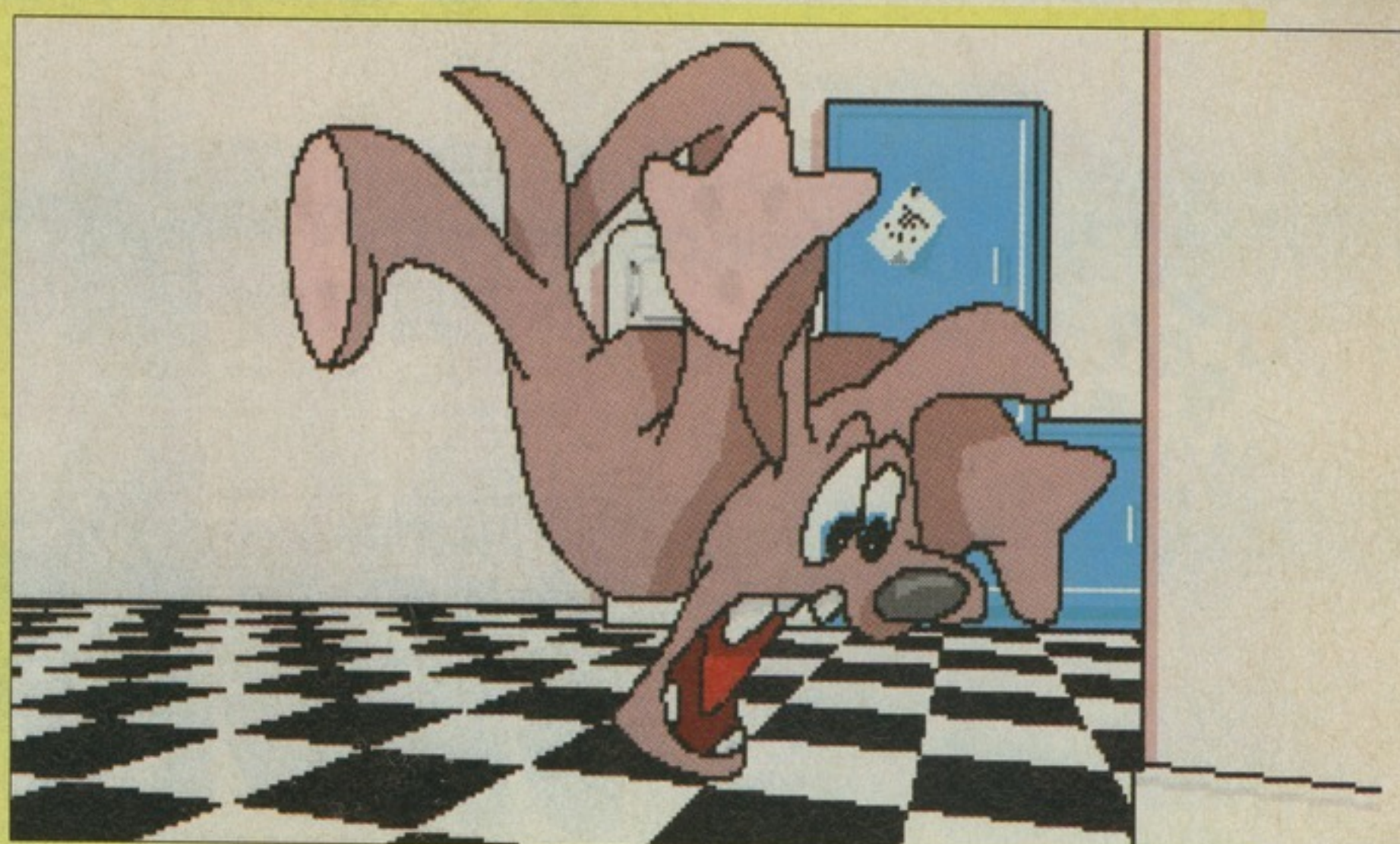
Communications

Sitting in a room with nothing but an Amiga for company can be a lonely business, which is probably why the comms field has taken off as rapidly as it has. Using a device called a modem (costing as little as £100) it is possible to connect an Amiga up to the telephone line and talk to other users worldwide (or county-wide, if you're at all worried about the size of your phone bill).

One of the most popular uses of modems is to talk to Bulletin Board Systems. These systems are a bit like Teletext, except that you can leave messages there for other people and load programs stored there directly into your own computer. You can also put your own programs onto a BBS for general consumption, when you get round to writing some.

Business

Business applications fall loosely into three areas. The first, wordprocessing, is a means of using the Amiga as a typewriter. The difference is that all changes and corrections can be made on-screen before any paper is wasted.



What! I can even make my own animations too? Yesirree, it's all possible on the incredibly versatile Amiga.

Most programs will also check spelling and allow large sections of text to be moved around with the greatest of ease.

Next is the spreadsheet, with which it is possible to type in figures relating to your business, perform calculations and use them as the basis of predictions for future business performance.

Third, databases. These enable information to be filed and retrieved. If, for example, a database contains a nationwide list of customers names and addresses, the program could search for all of the customers living in London.

Music

The Amiga has stereo sound as standard. It can play four separate notes at once, with each of these being a sample – a replica of a real-world sound, such as guitar, a piano, a dog barking or whatever. There are many programs around for writing tunes. The best of these is probably *MED*. Apart from the price of the disk it comes on, this program is free from most public domain libraries.

A MIDI interface (starting at around £20), can also be bought to link the Amiga up to and control a number of dedicated synthesisers. Music can be entered into the Amiga and played back on a keyboard.

Desktop Publishing

With a DTP program and a printer it is possible to put together a newsletter or magazine all on the computer's screen. The user is given control over the appearance of the page, and can choose the sizes and styles of the text and the positioning of the pictures. Once the page looks good, it can be printed out for a permanent copy.

Desktop video

The Amiga is making a terrific impact on the video market. A device called a genlock enables it to mix its own graphic output with that of a video recorder. At the simplest level, this means that now anyone can add titles to their own home videos. The more sophisticated user can make stunning animated videos as seen on Channel 4's *Chart Show*. ■

SCALA

THE PRESENTATION PROGRAM



reviewed by

AMIGA SHOPPER

Improve your business presentations with the wealth of high-quality titling software available.

AMIGA SHOPPER
The vital resource
for your Amiga

THERE'S MORE WH

ONLY 99p

EXPERT ADVICE • TOP TIPS • BEST BUYS • NO GAMES!

AMIGA SHOPPER

The best selling serious Amiga magazine

MUSIC & MIDI

MIDI, sampling and music programming explained, top products reviewed

PROGRAMMING

Learn C, AMOS and Basic with our detailed tutorials

GRAPHICS

Paint packages and animation programs reviewed, plus hints & tips on Amiga art

EDUCATION

Teach your kids and save money at the same time. Find out how inside

BUSINESS

Spreadsheets, databases, word processors, accounts packages... all covered inside

PUBLISHING

Learn to use DTP software, scanners and printers to produce all your work

HARDWARE

DIY enthusiasts can build their own add-ons with our simple hardware projects



**BEGINNERS
START HERE**

All the jargon explained - guaranteed

PUBLIC DOMAIN WORLD

Save a fortune with our comprehensive monthly guide to free software

FIRST THURSDAY OF THE MONTH • YOUR SERIOUS AMIGA GUIDE

UNLEASH THE POWER



Your Amiga is capable of much more than just playing games - Amiga Shopper can show you how

ANSWERS!

16 PAGES OF
TIPS IN EVERY
SINGLE ISSUE

Future
PUBLISHING
Your guarantee of value



**BRITAIN'S
BEST-SELLING
MAGAZINE
FOR SERIOUS
AMIGA
COMPUTING**

When you've had your fill of games, *Amiga Shopper* looks at the more serious things in life. Your Amiga is a superb computer for graphics, DTP, music, education and dozens of other applications. Every month *Amiga Shopper* shows you the hardware and software to buy, and teaches you how to get the best from your machine with tutorials and advice.

On the first Thursday of every month *Amiga Shopper* bring you:

- Amiga Answers - 16 pages of advice from a panel of experts
- AmigaDOS - coping with the vagaries of the Amiga operating system
- Business - how to use your Amiga to help you in your business life
- DTP - produce stunning publications with the aid of our tutorials
- PD World - the latest releases of free software reviewed and assessed
- Programming - beginner or expert, we'll teach you something new
- Video - the latest developments in desktop video production

PLUS: Music • Education • Comms • Graphics • AMOS • News

**And we've saved the best bit until last -
AMIGA SHOPPER ONLY COSTS 99p!**

B

AMIGA GAMES

WHERE THIS CAME FROM...

AMIGA POWER

**GIANT THREE, FOUR AND
EVEN FIVE PAGE REVIEWS!**

We give more space to games than any
other mag - up to 45 pages every issue!



**THE BIGGEST TIPS SECTION
IN ANY AMIGA MAG!**

We run more pages on more tips every
month than any other computer games
magazine, including GIANT PLAYER'S
GUIDES - this one on *Rainbow Islands* ran
to a massive 11 pages!

**OVER 300 AMIGA GAMES
RATED EVERY MONTH!**

AMIGA POWER is the only magazine to
review EVERY Amiga game released, be it full
price or budget, as well as carry extensive
coverage of older games. They're the most
detailed reviews you'll ever read - and there
are more of them too!



**BRITAIN'S
BEST-SELLING
AMIGA
GAMES
MAGAZINE**

PLUS! THE AMIGA POWER DISK

Packed with playable demos and the best of PD!

**FULL COLOUR • LARGER THAN NORMAL SIZE
THE MOST RESPECTED WRITERS IN THE BUSINESS
ONLY £2.95 EVERY MONTH**

Quite simply the best Amiga games magazine ever!



Future
PUBLISHING

Your
guarantee
of value



ISSUE 3 £2.95 JULY 1991

FROM THE MAKERS OF AMIGA FORMAT, A MAGAZINE WITH ATTITUDE

AMIGA

IF I WASN'T A PROGRAMMER I'D BE A...TEST PILOT!
TOP CREATORS TELL ALL ON PAGE 45



GENLOCKS
RENDALE 8802
£199.99
RENDALE 8806
£862.50

SPECIAL OFFER
Buy a Rendale 8802
Genlock and a switchbox
and pay only **£226.99**
for both

**MODE
SWITCHBOX FOR
THE RENDALE 8802**

This handy little box plugs simply into your system, to give you a hardware solution to the problem of switching between modes. You don't need software, so you save valuable memory.

Only £34.99

THE GENLOCK PEOPLE

Do you want to overlay computer graphics or titles onto your videos? If so, you will need a Genlock. Rendale Genlocks are built to a very high standard, and are used widely in the professional environment. Each of the Rendale machines offer both foreground and background modes, the 8802 is a purely composite machine, the 8806 also offers a professional RGB mix option, as well as other advanced features. Do not be fooled by cheaper versions of our Genlocks which are presently on offer, buy direct from the manufacturer or an approved supplier.

Please call for further details.

SUPER-VHS 8802

At last, the Rendale Super-VHS 8802 is available. This high quality unit is based around the Rendale 8802, and offers additional features such as:

- Super-VHS in and out.
- Hardware controlled wipe patterns.
- Hardware controlled fade to black.
- Cross fade between Amiga and video.
- Internal mode switchbox.
- Amiga only preview facility.

£599.99

THE BIG ALTERNATIVE SCROLLER

It's new, it comes in a black folder.

Price: £49.99

It's simple to use, and it's here! The Big Alternative Scroller is now on sale. This is a self-contained titling program on one disk. The software enables you to type in credits, titles, display information etc, and scroll them either vertically or horizontally on your monitor screen and likewise onto video tape.

This program is so simple to use that you hardly get a manual, because you don't need one. Everything you could ever need is on the screen for you.

This program requires 1 megabyte of Ram.

Upgrade your existing 8802 to
Super-VHS for only £420.

We will need your 8802
for approximately two days.

Please call Fiona on (0604) 790466 to arrange a
service date for your unit.

Upgrade your unit and enjoy all the benefits
of the S-VHS 8802.

**PRICES
INCLUDE
VAT &
DELIVERY**

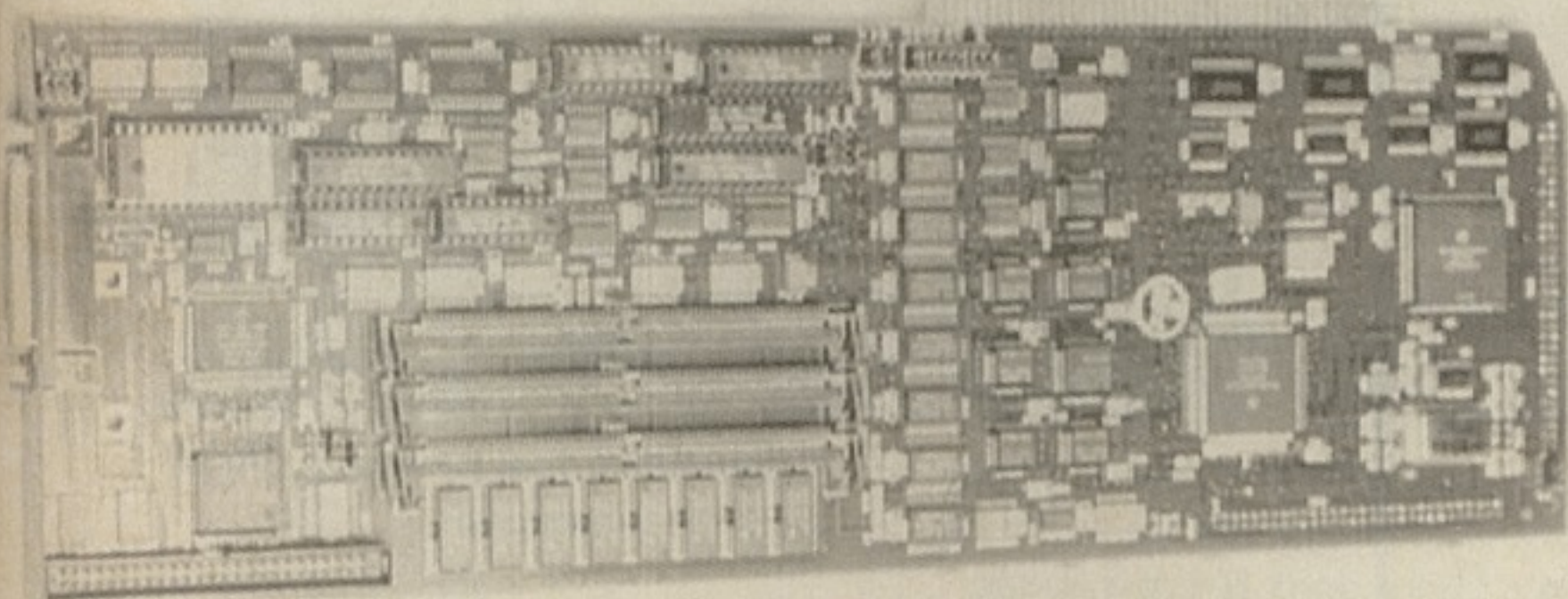
**All our
products
carry a
12 month
warranty.**

**62 Tenter Road,
Moulton Park
Business Centre,
Northampton,
NN3 1AX,
England**

**Tel: (0604) 790466
or 081-941 6117
Fax: (0604) 647403**

Let's raise the stakes

There are many ways of improving your basic Amiga setup. All sorts of extras can be plugged in, strapped or bolted on...



Accelerator cards can boost the speed performance of the Amiga, saving much wasted time waiting for the processor to catch up.

MONITORS

Q

Screening mad

My wife stomped on my RF modulator after missing an episode of *Eastenders* because I was using the telly for my Amiga 500. She says if I get in the way again she'll do unpleasant things to me with the vacuum cleaner. Can you recommend a good colour monitor?

A

Our marriage guidance and monitor specialist, Egbert Nobacon, writes: "It all depends on your budget. The poshest monitors are of the multi-sync variety, which support ECS screen modes. I've got a Taxan 770, but then I earn an absolute stash.

Otherwise, you could try the Philips 8852 or the lower resolution 8833, or even Commodore's own 1084D if you're on a tight budget. The best way to choose is to go to your local dealer and hassle him

into showing you how they fare side-by-side, and keep an eye out for up-to-the-minute info on new monitors in *Express*.

RAM

Q

Big RAM

I've got an Amiga 500 expanded to 1Mb with the

Commodore A501 RAM/Clock. I was thinking of getting an A590 hard drive, which has an unpopulated RAM expansion upgradable to 2Mb. Does this mean I can have a total of 3Mb available, or will the drive's expansion negate the benefits of the A501?

A

You can pile on the chips as much as you like (up to the A500's 8Mb ceiling) without losing out on the A501's extra RAM. However, expanding your memory beyond 3Mb is going to cause problems with your current set-up. This is because most RAM fits on the same expansion slot as the A590. The solution is to buy a memory board which duplicates this slot, so that the board can be fitted to the computer, and the hard drive fitted to the board. Both the Cortex Expansion from Memory Expansion Systems (☎ 051 236 0480) at £279 for 2Mb and the Supra



Fantastic quality 24-bit images can be brought to life when you plug a graphics card into your Amiga.

500RX (distributed by, among others, Surface UK ☎ 081 566 6677) will do this. Both of these boards can hold up to 8Mb of RAM.

PC EMULATION

Q

The first degree

I've recently started a degree course for which I need a PC. However, I've already got an Amiga so could you recommend a PC emulator? I need to run programs such as *Turbo Pascal* and *Lotus 1-2-3* with it, so it must be fully compatible.

A

There are two types of emulator - software and hardware. I'd recommend against software emulators for your purposes as, although they're cheap, they use the Amigas operating system to create a PC environment which slows things down markedly. They're also prone to crashing and sometimes refuse to run certain PC applications.

More expensive, and much more fun, are hardware emulators, commonly dubbed 'bridgeboards'. They contain a whole PC on a circuit board that can plug into your machine and use its monitor and drives just like a stand-alone PC. Such dedicated boards can cope with most PC software and give near perfect PC performance. You might like to check out the AT-Once or the KCS Powerboard, both of which were reviewed in issues two and three of *Amiga Shopper*.

PRINTERS

Q

Into print

I want a printer to use with my Amiga, but frankly find all the different sorts available confusing.

continued on next page

Continued from page 15

Could you outline some of the differences?

A

The cheapest type of printer is the dot matrix. This uses a mechanism called a print head which contains a number of pins. To print a character, some of these pins press outwards, making an impression on the ink ribbon and leaving a mark on the paper. The more pins in the print head, the better the results, since the characters produced look less like they are made up of dots and more like proper printed characters. The most common dot matrix printers have either 9 or 24-pin heads. As well as text, they will also print graphics but with results that are less than exceptional. It is also possible to get hold of colour dot matrix printers, but again, don't expect too much in the way of quality printout.

For good text output, you might like to consider a daisy-wheel printer. These have a rotating head with all of the characters engraved on it. When printing, the relevant character on the head is pressed against the ribbon. The output is very much like that of a typewriter. However, daisy-wheel printers cannot reproduce graphics.

Next up the scale is the thermal printer. These work by squirting the ink onto the page directly, and can produce very good results for both text and graphics.

For colour graphics output, a colour thermal transfer printer is a good choice. This works by using a hot print head to transfer ink to the page. A ribbon with three different colours on it is used. These three can be mixed to produce the required colours.

The king of printers for the desktop publishing world is the laser printer. These produce high quality pictures and text in which it is impossible to discern the individual dots apparent with a dot matrix or bubble jet printer. Unfortunately, laser printers are rather expensive, but you do get what you pay for.

EXTRA FLOPPY

Q

Floppy death
I'm getting sick to death of having to swap disks while working with a program. What do you recommend?

A

The obvious answer is to get another disk drive. The Roctec RF302, which you should be able to pick



A hard drive is a must if you're going to be doing serious work.

up from most stores for around £60, should suffice. It was chosen as Best Budget Buy in *Amiga Shopper*. An extra floppy drive can make life so much easier. Really, two drives are the absolute minimum requirement for a hassle-free Amiga system.

HARD DISK

Q

Driving hard
I'm thinking of buying a hard disk but I want to be sure I'll really use it before lashing out. What can it do that a floppy drive can't?

A

Not a great deal, but it does the same things much better. Whereas a floppy disk can hold about 880k of data, a hard drive will hold twenty or more times this amount. Accessing this data is also much, much faster.

The disadvantage of a hard drive is that the disk is not removable. All the information goes on to the same disk; once this is full it is either time to start making priority decisions and deleting a few things, or to buy a bigger hard drive. But the time saved in greater retrieval speeds and the avoidance of disk swapping make a hard disk an essential purchase for the serious Amiga user.

GENLOCKS

Q

Caption up
I have a number of home videos (weddings, family occasions, you know the sort of thing) that I would like to add titles and captions to. Is it true that I will need a genlock to do this?

A

A genlock is a must for the video enthusiast. Using one, it is possible to synchronise the Amiga's video

output with another video source. This is great for adding titles to a home video. The titles are displayed on an Amiga, the video is played back, and the whole lot is recorded on another VCR.

You can perform wipes and fades between the two sources, choosing

which of the Amiga's colours are to be displayed and which will appear transparent (allowing the video source to show through underneath). Genlocks start from as little as £150.

DIGITISERS

Q

In the picture
How can I get the pictures I see in the adverts into my Amiga? I'm sure they're not drawn freehand, so is there must be some way of connecting a video to the Amiga.

A

A device called a digitiser turns video signals into a digital format which an Amiga can store and display. Using one, a video image can be transferred to the Amiga for re-touching with a paint program. Popular digitisers are NewTek's Digiview Gold and Rombo's Vidi-Amiga at around £100.

For these to work in colour, a colour splitter is also required. This takes a colour signal and separates it into its red, green and blue components. Each of these signals is then digitised separately and re-mixed on the Amiga via software.

MODEMS

Q

Communicate
I am interested in getting into comms so I can meet interest-

ing Amiga owners and get my hands on all their lovely PD software. I understand I need a modem. Is this the case, and if so, how do I go about fitting it?

A

You won't get very far in the world of comms without a modem. A modem converts the digital signals from an Amiga into a form suitable for transmission down the phone line. A modem is also necessary at the other end to convert the signal back into a form the receiving computer can understand. Most modems work with any computer by plugging into the serial port.

Modems start at around £150.

For this you will get something which will enable your Amiga to send data to another computer at about 240 characters per second. The more expensive models basically do things faster, and therefore reduce your phone bill.

MICE

Q

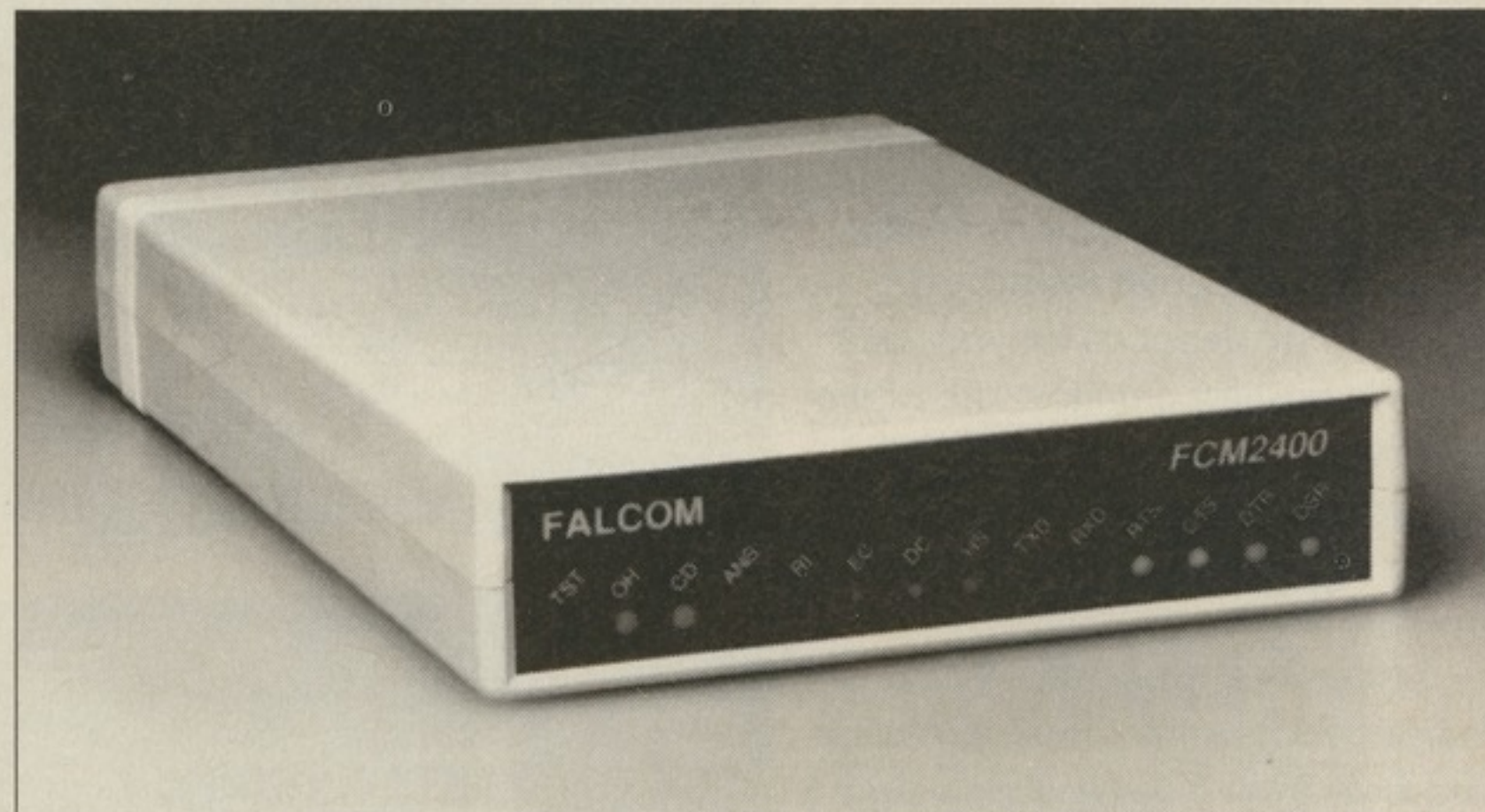
New mouse please
Is it possible to buy a mouse other than the one supplied with the Amiga?

A

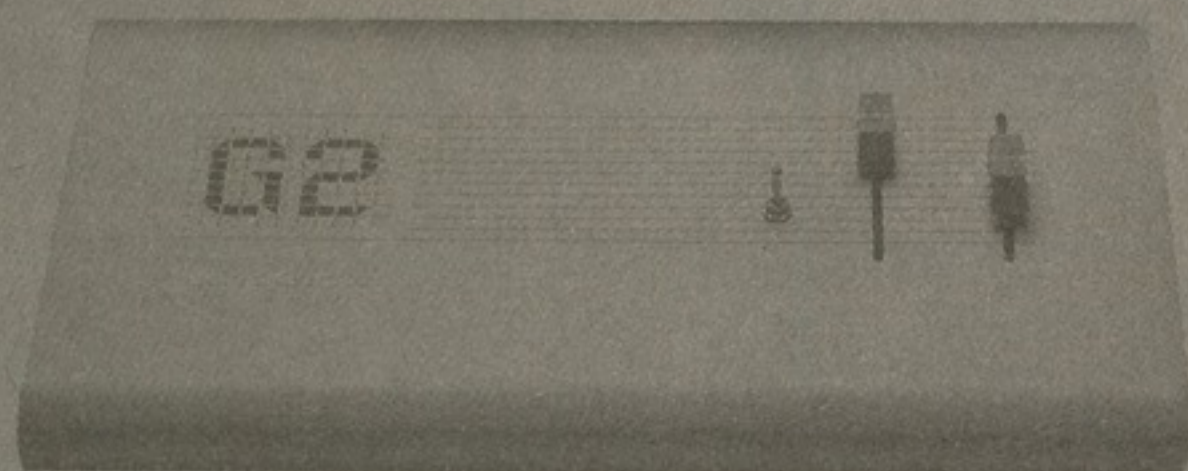
Oh yes. There are now a number of mice on the market. Some people find they just can't live with the standard Commodore mouse; some just decide it is time for a change after their original mouse has squeaked its last. Either way, there are a lot to choose from.

Mice are available with a variety of resolutions, measured in dots per inch. The higher the resolution of the mouse, the further the mouse's pointer will move across the screen for a given movement of the mouse across your mouse mat.

Prices for good replacement mice start from as little as £27 and go up to about £80. ■



Get into the exciting world of communications by simply plugging a modem into your serial port.



AN ORIGINAL IDEA.

When G2 Systems designed the original VC1 back in 1989, its integral Coder and Mixer with full S-VHS capability was a conceptual breakthrough that others still strive to match.

This lead has been further extended by the development of the VC2.

Voted 'Best Genlock' in the German VIDEOaktiv magazine, the VC2 features an additional comprehensive Wipe and Effects section.

So, if you want to record computer graphics onto video using an Amiga - a G2 VideoCenter can turn your ideas into reality.

Contact: G2 Systems,
5 Mead Lane, Farnham,
Surrey GU9 7DY
Tel: 0252 737151
Fax: 0252 737147



AMIGANUTS UNITED



169 DALE VALLEY ROAD, HOLLYBROOK, SOUTHAMPTON, SO1 6QX.

Tel enquiries: 0703 785680, Mail Order only.

- 1036:** Amibase Professional II (v.1.2). This is an excellent Database program£3.50
- Bug-Bash:** Kill the bugs, clean up the trash in the garden. A great kids game.£3.00
- 877:** 1 Across 2 Down. A fully fledged crossword program. (Data disk No: 1 is supplied free!)
for only £5.00. Data disks 2, 3 and 4 are now ready at £2.00 each.
- 1038:** Super Amidash. Do you remember that good old Commodore 64 game Boulderdash?
Well here is your chance to have that fun again 1Mb£3.00
- 1068:** MOD Processor v1.92. make picture and/or music progs, adjust pic height/width.
This version will load the new 8 channel octamed music and is excellent!.....£3.50
- 1075:** Intuimenu. The easiest way to run all your programs. By Nicholas Lewis£3.00
- 1077:** Clear. A very good, (but mind-bogglingly hard), game from PH Software.....£3.00
- 1083:** Copper Writer/Screen Designer. By Frank Tout. (For programmers only)£3.00
- 1088:** Weird in Edgways. This is a good puzzle game. By Chris Banks 1Mb£3.00
- 1100:** School Timetable Creator. (Print your timetable). By Keith Grant. 1Mb£3.00
- 1102:** The Sprite Designer. A good way to draw/save sprites. By Frank Tout£3.00
- 1139:** The Advanced Screen Designer. Similar to 1083 but far superior£3.50

NO MORE WAITING! SUBSCRIBE TO YOUR FAVOURITE DISKS NOW!

If you would like to obtain the Amiga Coders Club disks as soon as they are published, why not send £33.00 and ask to go on the A.C.C. mailing list now? We will send you each issue as soon as it is ready. (Applies to issue 14 onwards.)
(If ordering from outside EEC countries, add an extra £6.00 for years postage)

PLEASE NOTE THAT ISSUES RELEASED PRIOR TO ACC 14 MUST BE PURCHASED SEPARATELY

Main catalogue disk sent "FREE" with orders above £15.00 - Please remember to ask for your free copy if you send in an order above £15.00 as we tend to forget. Prices quoted include return post/packing/ VAT - Make cheques payable to:

AMIGANUTS UNITED - (help us by stating which magazine you saw this advert in).

Also available is the brand new 1991 update number 4. Send for it now! £1.00

(Update 4 contains the new DCopy V1.6 and it is a bargain!)

Please note that we are closed from 20th to 26th August and no orders will be dealt with during these dates.

MASTER VIRUS KILLER V2.2 IS HERE!

It now recognises another 27 of the little buggers, including the virulent SHA! This excellent program is only £5.00

The full two disk version of Mike Simpson's A-Gene is here! No need to send your order to Australia anymore!...

£15.00 Europe, £20.00 Rest of World

LOOK

THE FANTASTIC (1Mb) EIGHT OR FOUR CHANNEL MIDI COMPATIBLE OctaMED v1

Note that V3.11 of the public domain four channel med is also included in this excellent program and you can switch from 8 to 4 channels at will.

Only £10.00 (£15.00 for non-European). The price includes return post and packing. Payment must be in pounds sterling only. If ordering from overseas, send a bankers order/Eurocheque etc. (Credit card orders will not be accepted).

Into coding? - Want to learn? The Amiga Coders Club is for you! ACC 1-4 is the first four compressed issues of an excellent series for coders, even if you are new to the Amiga. If you want to learn Assembly, using DevPac, (or our own new ACC special assembler disk), this is the club for you! ACC 1-4 (compressed) £1.50. The Amiga Coders Club disks are packed with source, hints, tips, advice from many of the well known coders that are on the Amiga scene today. Issue numbers 5-14 are now available. Please note, (excluding the compressed introductory disk (ACC 1-4), and no. 12), the price for each issue of the ACC disks is only £3.00. ACC 12 is our birthday issue, it is a 2 disk set, and therefore the price is £6.00. Amiga Coders Club Special! Here is a low priced assembler package for all you coders out there in Amigaland. (See the review in this months Amiga Format) £5.00.

If you would like to take out a years subscription for the T.BAG disks, (applies to issue 50 onward), simply send £33.00 and we will send you each issue well in advance of them becoming available from any other supplier. (Note that issues 50 to 55 are ready now and will be sent upon joining). Issues released prior to T.BAG 50 must be purchased separately @ £2.00 each. If ordering from a non EEC country, add extra £6.00 to cover the years postage.

Doing the business

The Amiga is much, much more than just a games machine, as numerous businessmen are beginning to find out...

Q

Get the word
What advantages will a word processor give me over my trusty typewriter?

A

Have you ever written a sentence and then decided it would sound better if re-arranged? With a word

Furthermore, most word processors come with spelling checkers. These will search through your text, highlighting any unrecognised words and suggest alternatives. You can accept the spell checker's suggestion, or, if the highlighted word is correct, make the spell checker remember it for future use. Having used a word processor for a while, I'm sure you will be loath to go back to your typewriter.

Q

Report file
I teach a number of students in the evenings. I would like to use my Amiga to keep records of their names and addresses, their exam marks and areas of study.

A

This sounds like an ideal task for a database. A database enables you to store information in a structured way. A file is created, in which all of the information is stored. Then this file is subdivided into separate items called records. Each of your students would have their own record. The record is further subdivided into a number of fields. In your case, there would be a field for a student's first name, another for the surname, one for each line of their address, another for telephone number, and so on. These fields are used for nearly all database applications.

The rest of the fields are up to you. You could design fields to hold exam results, weak points in the student's knowledge, whatever.

Having designed your basic record structure, the information for each of your students has to be entered. This is quite a typing job, as you can imagine. Once it is done, however, it is an easy matter

to make changes, add new exam results and so on. The beauty of a database is that you can recall information about any one student, or about a whole group of students according to the particular criteria that you specify.

You could, for instance, ask for and print out a list of all the students living in a particular area, or even a list of all the students with a certain exam grade.

Two Amiga databases worth looking at are *Superbase* from Precision Software (☎ 081-330 7166) and *ProData* by Arnor (☎ 0733 68909).

Q

US keyboard
I've been using the *Pen Pal* word processor for some time now and am generally happy with it. There is one irritating thing though, and that is that the keyboard seems to be set up wrongly. When pressing the quote key, for instance, I end up with a '@' sign. Is this a bug in the program?

A

No, it is not a bug. Because *Pen Pal* is an American program, it assumes you are using an American keyboard. Changing the configuration to British is a simple operation:

Open the System window on the *Pen Pal* disk. You will find an icon there called *SetMap*. Click once on this, then go to the menus at the top of the screen and select *Info* from the *Workbench* menu.

A window with several boxes inside will appear, taking up the whole screen. Click inside the box labelled 'TOOL TYPES', and then type in the following line (making sure that you use the capitals that are shown here):

KEYMAP=gb

Having done this, press [RETURN] and click on the *SAVE* gadget. Now all you have to do is double click on the *SetMap* icon. And that, as they say, is very much that. ■

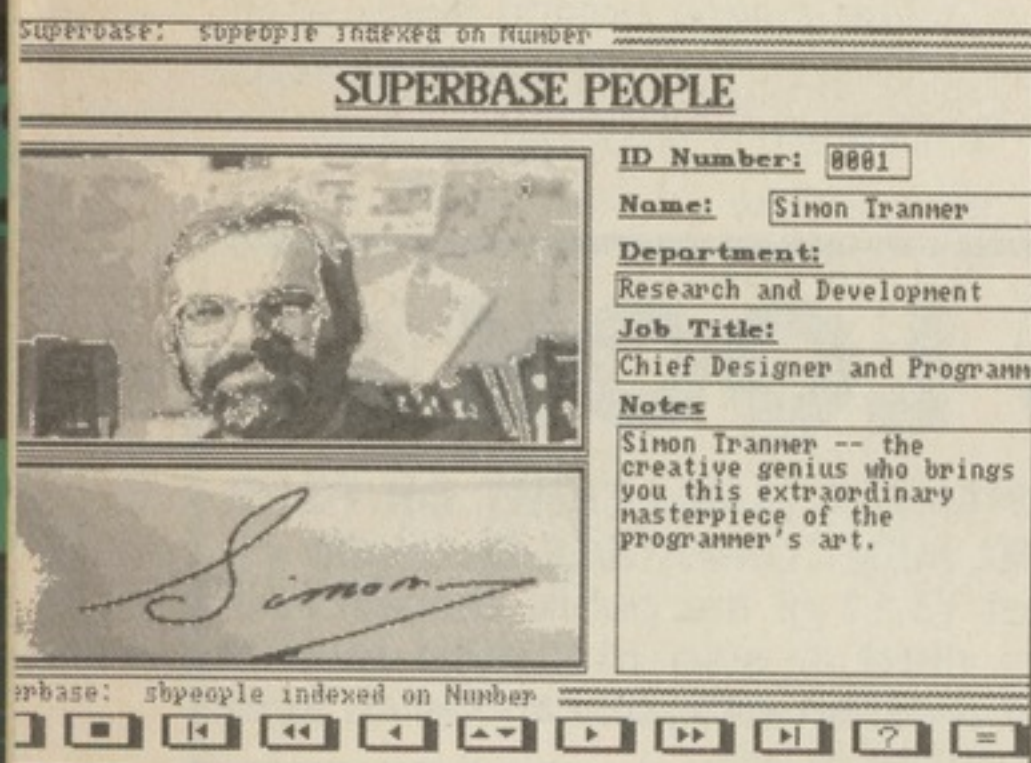
High quality databases, word processors and spreadsheets are available to turn your Amiga into the ideal home office accessory. Many small businesses now rely on the Amiga, particularly as with a slot-in PC emulator the world of PC-compatible business software is opened up.

JARGON BUSTING

ASCII: American Standard Code for Information Interchange. It is the data storage method commonly used when we type text files and enables data to be exchanged between different computers.

CUT: A word processor facility, often carried over to spreadsheets, whereby an area of text in a document can be highlighted and subsequently removed. The cut area is stored temporarily in an area of memory so that it can be PASTED back in the same or a different position.

SPREADSHEETS: A spreadsheet is a program that can help you sort out your business accounts and make financial predictions. It works by presenting the user with a large grid, with numbered rows and columns. Each of the squares (called 'cells') in the grid can contain one of three things: text, which is useful for adding labels, columns headings and so on; numbers, the actual data you want to analyse; and formulae, which operate on the numbers stored in the cells to produce results. A simple example would be of a stock list, with the first column being full of text describing each item of text, and the next being full of the quantities of each stock item. Then a cell at the bottom of the column would contain a formula to add together the contents in the cells above it, thus producing a total number of items in stock. Naturally, much more sophisticated functions can be applied to the numbers.



Both text and graphics can be filed in high-end databases.

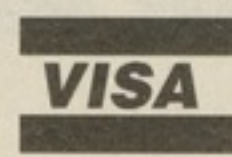
processor, this is simplicity itself. You can make any changes you like to the text, all before committing it to paper and wasting trees. You might decide that your final paragraph would read better if placed somewhere in the middle of the piece. Word processors have facilities to enable you to cut out a section of text and place it back into the document at any position.

They can also search through your text for a given word or phrase, which can be useful if you have mentioned a particular subject but can't remember where it was you made reference to it. A similar feature will search for all occurrences of a selected word or phrase and replace it with a new, user-specified one. Imagine the advantage of this if you were writing a novel and decided to change one of the character's names.

WIN A PC COMPETITION

INTRASET LTD

Tel: 025 72 76800 (Main office & 24 hr order line)
Helpdesk 0490 3284 (weekdays 3-4pm)
Fax your order on 025 72 74753



All prices include P&P and VAT. Overseas orders please add £5.00

CASHMASTER HOME AND BUSINESS ACCOUNTS

- Master your own finances. CASHMASTER is the easiest to use, most versatile accounts program yet written.
- CASHMASTER is suitable for both small business accounts or home finance use.

We wrote CASHMASTER for our own use out of sheer frustration with the other so called easy to use packages. CASHMASTER allows you to input entries in one easy operation and yet allows you to extract the absolute maximum of information in an impressive array of statements and reports: just look at its range of features:

- Easy natural data entry - just like a handwritten ledger.
- Full VAT analysis or omit VAT altogether if you wish.
- Any amount of ledgers at one time.
- No set time periods, span any time period - no one year limit.
- Reports can be produced over any time span (1 day to 100 years)
- Up to 100 user definable Class and 20 Accounts Codes.
- Detailed statements by selected Classes or Accounts.
- Profit & Loss Statement.
- Tagging of entries for report selectivity.
- Entries can be inclusive or exclusive or zero VAT.
- Automatic repeat of entries (standing orders etc.) yearly, half yearly, quarterly, monthly, fortnightly or weekly.
- Insert entries anywhere in ledger, CASHMASTER automatically sorts into date order.
- Search and find option on any entry anywhere within ledger.
- Reports can be output to screen, printer or disk file.
- Reference field for every entry (Invoice no. cheque no. etc.).
- Split and merge ledgers at any time.
- All functions available from main programme screen, Class and Accounts codes visible at all times.
- FREE pop up running total calculator called up with one key press.

CASHMASTER IS THE MOST USER FRIENDLY, POWERFUL AND VERSATILE ACCOUNTS PACKAGE YET - YOU WON'T BE DISAPPOINTED.

And now available with...

CASHMASTER INVOICING & STOCK CONTROL

- Full customer data file - easy to find account records.
- Full stock data file, price lists, re-order lists.
- Full invoicing with user defined messages.
- Full invoice editing, invoice to & deliver to fields.
- Pre-paid, account or credit note, full VAT facility.
- Settlement, no return & line discounts.
- Stand alone invoicing/stock control or integrates fully with CASHMASTER for a FULLY FEATURED ACCOUNTS/INVOICING PACKAGE costing less than a quarter the price of its rivals.

CASHMASTER £39.95
CASHMASTER INVOICING £39.95
BOTH PROGRAMMES TOGETHER £69.95

££££ PROFIT FROM YOUR MICRO ££££

RECESSION? WHAT RECESSION?

- Make your Micro earn!
- Whatever make of micro you have you can use it to make a good income even if you only have a couple of hours spare each week!
- This is not PIE IN THE SKY, MAKE A MILLION BEFORE BREAKFAST nonsense but a true report of exactly the sort of steps that we ourselves took at INTRASET.
- We have put together a package of easy, sensible business ideas which can easily be used by anyone with any Micro.
- NO COMPUTER EXPERTISE REQUIRED.
- Earn £££'s from home doing what you enjoy doing - using your computer!
- You probably already have everything you need to start earning.
- Hundreds of potential customers in your area who will GLADLY pay for your services. We tell you how to find them!
- Part time or start your own full time business. Ideal for housewives/husbands, unemployed etc. Very little capital outlay on projects.
- Full step by step sixty page book PROFIT FROM YOUR MICRO comes complete for just...

£14.95 inclusive

SPECIAL DISK DEAL

DISK	£ 10	£ 50	£ 100
3" CF2 (AMSOFT)	19.00	92.50	180.00
3 1/2 DSDD	6.90	32.00	60.00
5 1/4 DSDD	3.90	19.00	37.00

GENUINE HIGH QUALITY DISKS

POOLSMASTER The Football Pools Predictor

"A LICENCE TO PRINT MONEY" - Mr F C Hammond of Essex

"WE HAVE WON MANY THOUSANDS" - Mr P E Roberts of Dorset

- Just a couple of the many unsolicited testimonials about this truly amazing Football Pools Predictor Programme which has consistently astounded us with its accuracy. Check out its features:
- Predicts homes, aways and draws.
- No fiddly typing in of team names: unique indexing system for quick entry of fixtures and results just type in the results each week from your usual newspaper and the programme updates itself.
- Uses scientific formula which is the result of many years study of the football pools to give a strike rate which is consistently higher than the laws of average.
- Also has a SEQUENCE PREDICTOR option in addition to form Predictions which analyses coupon number sequences. This option has astounded us in the past and continues to do so.
- Can be used for league and cup matches. Updates season after season. No need to buy a new copy every season.
- Send for POOLSMASTER today and increase your chances of that JACKPOT. Comes complete with manual and informative Pools Guide.

DISKS AND TAPES £24.95

★ ★ SPECIAL OFFER ★ ★

SPECIAL COMPENDIUM DISKS/TAPES
POOLSMASTER/COURSEMASTER £44.95.
BUY ANY THREE PROGRAMMES AND
RECEIVE PROFIT FROM YOUR
MICRO FREE OF CHARGE.

THE GRAPHOLOGIST

HANDWRITING ANALYSIS PROGRAMME

"UNCANNILY ACCURATE" - 8000 PLUS MAGAZINE

- Analyse YOUR handwriting, or your partners, friends etc. What are they REALLY like! Your handwriting always reveals your true nature, state of health etc.
 - This programme is a must for anyone interested in handwriting analysis, both expert and beginner alike.
 - The programme will provide an analysis of a subject's handwriting ranging from a simple signature analysis to a full 15 page complete character report. Ideal for prospective employers, experienced graphologists or anyone interested in this fascinating art.
 - All you need is a sample of the subjects handwriting and follow the simple on screen instructions. Upon completion you are left with an in depth report detailing all aspects of your subjects character from career ambition, state of health through to sexual preferences and megalomania!
 - You may even edit this report using your word processor for representation to your subject/client.
- THE GRAPHOLOGIST is a must for serious business use or simply have loads of fun entertaining your friends whilst learning the finer aspects of this fascinating subject.

● COMPLETE WITH MANUAL OF GRAPHOLOGY

Price £49.95 inc. VAT and P&P

All programmes available for IBM/PC & compatibles, all Amstrad PC's, Amstrad PCW's, Atari, Amiga, CPC 6128 (unless otherwise stated). Perm-Master also available for Commodore 128 disk. Coursemaster and Poolsmaster also available for all Amstrad CPC's, all Spectrums and C64 & 128

COMPETITION RULES

Every purchase made qualifies you to enter our competition draw. The total value of your purchases will determine the prize won.

There will be one 1st prize only per draw.
Spend up to £20.00 - 1st prize = a Star LC printer.
Spend up to £40.00 - 1st prize = Amstrad PC1512 SDMM
Spend over £40.00 - 1st prize = Amstrad PC1640 SD colour.
5 runners up will each win full set of Intraset software as above. Intraset's decision final on all matters.
Send SAE for list of winners.
Draw dates 28/9/91.

COURSEMASTER THE COMPUTER HORSERACING TIPSTER PROGRAMME

- BEAT THE BOOKIE FOR A CHANGE!!
- RATES ANY RACE using racecard in any daily paper or racing paper - BOTH FLAT AND JUMPS.
- Gives clear forecast of best selection PLUS second and third for Tricasts etc. and even recommends type of bet.
- Works out your WINNINGS on most popular types of bet ie. SINGLES, DOUBLES, PATENT, YANKEE, CANADIAN, etc.
- MAINTAINS A BANK ACCOUNT - Bet like a PROFESSIONAL!
- PLUS the amazing COURSEMASTER SYSTEM BET. This superb easy to use betting system regularly provides our customers with MAJOR WINS for small stakes - try it and amaze yourself. Will even PRINT OUT YOUR BETTING SLIP for you if you have a printer!
- COMPLETE WITH 20 PAGE BETTING GUIDE AND MANUAL

DISKS AND TAPES £24.95

PERM-MASTER

If you enjoy doing the Pools and regularly use perms as we at INTRASET LTD. recommend then checking your coupon can be a nightmare. Have you won or haven't you? Perm-Master ends the agony by checking your perm for you. Simply tell it which of your coupon numbers are draws and it will do the rest, telling you how many winning lines you have. Perm-Master comes complete with several of the top perms already built in, but if your favourite perm is not there then simply create your own using the unique perm editor.

- Fast and simple to use
- Unique PERM EDITOR
- Create your own perm using the inbuilt perm calculator, test your own theories etc.
- For most block and single line perms

Price £19.95

SPOT-THE-BALL

For all SPOT-THE-BALL fans this programme is a must, no more tiresome counting of 'x's or messy rubber stamps. Use your computer to do your SPOT-THE-BALL coupon. Just tell your computer where you think the ball is using the screen template supplied.

Will print out up to 540 micro-fine crosses in your chosen shape, or simply tell it to choose at random. Learns as it goes - tell it where the ball is every week and build up a database of results to use in SPOT-THE-BALL's sequence predictor option.

Works with any Epson compatible dot matrix printer or build your own printer driver using the on screen option.

● LET SPOT-THE-BALL fill in YOUR COUPON this week

SPOT-THE-BALL £17.95

P.C. PATIENCE

- Four addictive P.C. card games to test your skill and luck.
- P.C. PAIRS, THE INTRASET CASINO, P.C. GOLF & CHESS PATIENCE
- Ideal relaxation whilst the boss is not looking, but don't blame us if you get totally addicted, (But we know you will!)

P.C. PATIENCE £14.95 (IBM/pc compats only with 256K + CGA monitor required)

Spend over £100 and claim this item free!!!

INTEREST FREE CREDIT TERMS

Spend over £80 and spread the cost at no extra charge! (Cheque purchases only). Simply divide your order by 4 and send us four cheques each with your name and address and cheque guarantee card number...Date the first cheque with today's date and post-date each of the other cheques by one month i.e. 1/5/91, 1/6/91 etc. We will then hold each cheque until it is due. Sorry not available on hardware items

HOW TO ORDER: CHEQUES, P.O.'S TO: INTRASET LTD (DEPT. NCE)
FREEPOST 10 WOODSIDE AVENUE, CLAYTON-LE-WOODS, CHORLEY, LANCs. PR6 7BR
OR PHONE/FAX AS ABOVE FOR LIGHTNING FAST SERVICE.
WE ACCEPT ALL MAJOR CREDIT/CHARGE CARDS.
SEND SAE FOR FREE SOFTWARE CATALOGUE

Getting baud

Comms is a fun way of staying in touch with other Amiga users and acquiring cheap software. Here's how to go about it...

Q

Get on baud

I recently bought a modem and need some software to drive it. Could you recommend some good PD comms packages?

A

There are two types of comms software to look at – viewdata and terminal. Viewdata is a teletext-type

What exactly is baud rate, MNP and V.42bis? And What do I need just to get up and running with comms?

A

Yes, comms jargon can be pretty horrific. But never fear – it's all (reasonably) straight-forward.

Baud rate is a measurement of the speed of modem communication. The higher this number is for a modem, the faster it can talk to oth-

ers and the less you will have to pay in phone bills.

Actually, there are two very similar measurements for the same thing.

Computer information is stored as a series of bits, or binary digits (there are eight bits in a byte, the standard measurement of memory). So

modem speeds are often given in bits per second, which means you can

quickly and easily work out how long it will take to send or receive a given amount of information.

Baud is actually defined as the number of changes in state per second along a phone line. For simple modems, the two are directly equivalent. More advanced modems can compress your data into a smaller space, resulting in the fact that a higher number of bits per second can be sent at the same baud rate.

The MNP and V.42bis you refer to are standards governing the way the fancy features of more expensive modems work. Such standards are necessary so that two modems from different manufacturers can communicate.

MNP, standing for Microcom Networking Protocol, comes in a number of levels, each including and adding to the previous one. Levels one to four deal with error correction, enabling a receiving modem to request a re-transmission

of any corrupted data from the transmitting modem. Level five also compresses this data before sending it.

V.42bis is a similar system. Plain old V.42 offers error correction, whereas V.42bis offers both error correction and data compression. The difference is that whereas the MNP standard was developed by an independent company, the V standards were developed by CCITT, the Comité Consultatif International Telephonique et Telegraphique.

You should be able to pick up a modem for not much more than £100 which will be enough to get you started. Although it won't have data compression or error correction, it will certainly be able to send and receive data at a useful 2,400 bits per second.

Q

Up and comming

Which are the best UK bulletin boards to hook my Amiga up to, and how much will using them cost me?

A

First off, there are quite a few BBSs around the country, each of them with its own merits, but as you sound like a cash-conscious type, you'd probably do well with a local board to keep the telephone costs down. Here's a list of some good ones, by region, to start you off, though it is by no means an exhaustive list:

Scotland – Scottish Opus
☎ 041 880 7863

Wales – Public House BBS

☎ 0222 221168

Eire – DecBBS

☎ 010 353 1 882454

North East England – Code-o-matic

☎ 0472 360811

North West – Scorpion's Nest

☎ 0228 26478

Midlands – The Plug-Ole

To get going in comms, you'll need a modem, communication software and a telephone line. Check out the ads for modem prices and the PD libraries for software. Although comms may at first be scary, it's worth persevering as getting on line keeps you up to date with news on the Amiga, and BBSs are a source of free software.

☎ 021 472 0256

South East – Cheam Amiga BBS

☎ 081 644 8714

South West – Severn Side BBS

☎ 0452 611342

Once you're into comms, you'll find numbers for many more BBSs on the BBSs themselves. Bulletin boards are free; the only charges are phone bills – it all depends on how much you use your modem.

If you simply can't stop comming over long distances and find your phone bills are getting rather steep, it may be worth switching from BT and going for Mercury, whose long-distance charges are somewhat cheaper. Mercury customer services can be contacted on ☎ 0800 424 194. ■

```

Commodore Command Line Interpreter * Copyright 1990 Xylogics, Inc.
Type 'cix' at the 'login' prompt to get started.
login: cix

Welcome to - The CompuLink Information eXchange

Provided by:
CIX
Suite 2, The Sanctuary
Oakhill Grove, Surbiton
Surrey KT6 6DU
Voice: 081 390-8446

Europe's Most
Advanced
Conferencing
System

081 390-1244 Tricon Modems with V21 V22 V23 V22bis Level 5 MNP 26 lines
081 390-5252 Tricon Modems with V21 V22 V23 V22bis Level 5 MNP 20 lines
081 390-9800 Amber Logic Mistral V32 12000 V42bis Level 5 MNP 4 lines
081 390-9787 Hayes Ultras with V32 9600 and V42bis Level 5 MNP 4 lines
081 390-1255 Courier HST modems with 9600 14400 Level 5 MNP 8 lines

And now, PSS access using our NUA of 2342 1330 0310

If you type 'cix' instead of 'cix', this screen will not be displayed
Use 8 databits, 1 stop bit and no parity otherwise CIX will not talk to you

Version 1.339 18/2/91
Are you on line? ttyq
Username? (Enter 'new' for new user) ■
CIX 15:41 08:00 CAP

```

A 'hello there' screen greets you when you log on to a bulletin board. This one's for CIX.

system that can display graphics and text, whereas terminal software shows text only.

Terminal software will do the trick in most cases and there are several commercial-quality programs in the public domain. A couple of examples that may be worth your while trying are NComm or JRCComm.

However, if you plan to use systems such as Gnome at Home or Micronet, you'll need Viewdata. It is doubtful whether there are any PD packages available for this, but a firm called Y2 (☎ 0923 50161) does a good commercial package called RubyTerm.

Q

Modem muse

I'm thinking of buying a modem, but am totally flummoxed by all the jargon surrounding the things.

JARGON BUSTING

BULLETIN BOARD SYSTEM: An area on a computer in which other users can communicate by means of modems, leave messages, exchange news and software. BBSs are run by a moderator or SysOp who vets all software on the BBS before releasing it for general consumption.

MODEM: A device which connects to the Amiga's serial port and converts computer signals into a suitable format for transmission along a phone line. Likewise, it will convert incoming signals back into a form the computer can recognise.

TERMINAL SOFTWARE: Will enable the Amiga to emulate the standard way of working as used by terminals connected to mini and mainframe computers. This includes a set of defined protocols used throughout the communications world, and means that users with different computers can communicate.

The harder they come

Behind the facade of Amiga hardware often lurk pitfalls. Let's get them filled in...

Q

White line fever

Why is it that whenever I come to print out graphics from *Deluxe Paint III* on my Star LC 24-200 colour printer, I get a load of horrible white

lines appearing all the way down the page?

A

All of the Amiga's graphics and sound are handled by a group of custom chips. The one concerned with graphics is the Agnus chip. Obviously, Agnus is nowhere near as complex as the Amiga's central processor. While the central processor has an address space (the maximum amount of memory it can recognise) of 16Mb, Agnus has an address space of 0.5Mb. This is known as chip memory, since it is the only part of memory that the custom chips can access.

Normally, computer operations consist largely of the central processor making accesses to memory. The Agnus chip is sophisticated enough to make its own accesses. However, if they both attempt to access the same area of memory, a clash is liable to occur. This is avoided by giving Agnus priority over the processor, by means of a process called 'cycle stealing'. The result of this is that the processor is slowed down when accessing chip memory at the same time as Agnus.

The processor can, however, access the remainder of the Amiga's memory without hindrance. This remainder is therefore termed 'fast memory'. The ideal situation is to have your programs running in fast memory, while storing the graphics and sound data in chip memory. This is not possible with unexpanded Amigas, since all of their 512K is mapped as chip memory.

A

RAMble on

Can you please explain to me in simple terms what the difference is between fast RAM and chip RAM? Does the fatter Agnus have anything to do with it? If so, how can I

The fatter Agnus came about because of the Amiga's increasing involvement with graphics. Basically, more memory was needed for bigger and better pictures and animations. So a new Agnus chip has been developed which is capable of addressing 1Mb of chip RAM.

You can find out which version you have by removing your Amiga's cover and looking at the board. Fat Agnus has a part number of 8370; the original Agnus is numbered 8361. If your Amiga is still under warranty and you're reticent about taking off the cover, there is an alternative. A PD program called VectaCheck will let you know which version you have without you having to get your hands dirty.

An upgrade can be performed by FMG (☎ 0733 391234), the official service engineers for Commodore. The price, including the cost of the new chip, is £80.

Q

Bubbling under
Is there a printer driver available for the Canon BJ-10e bubble jet printer?

A

Not as such, but there is one for the BJ-130. You can use this by

Hardware refers to the components that make up your computer, any peripherals such as mice, printers, disk drives, etc; extra memory - in fact, anything that isn't a program. As you would expect, hardware often requires some tweaking to get it working properly. This is especially true of printers.

switching the BJ-10e into BJ-130 emulation mode. JAMdisk #2 has a copy of this driver. This disk costs £2 from JAM ☎ 0895 74449. Alternatively, you can get it from Canon ☎ 081 773 3173.

Q

RAM packed

Opening up my Amiga the other day, I made an intriguing discovery. There was some writing on the board saying '512K/1M RAM'. A closer look revealed that there were four chips there, but also gaps for four more chips. Would it be possible to add more RAM directly on to the board?

A

These extra slots, present on revision 6A boards, are indeed for a 1Mb expansion. You could fit extra chips there, so long as you had no intention of putting RAM (such as the A501) into the trapdoor slot.

This is because the two areas occupy exactly the same address space, meaning that the processor wouldn't be able to see both sets of chips at the same time. ■

JARGON BUSTING

ADDRESS SPACE: The amount of memory that something (such as the 68000 processor or the custom chips) can access. This is determined by the number of address lines that each particular chip has. A fat Agnus has 20 address lines, giving it an address space of 2 to the power 20, or 1Mb.

K: A kilobyte, which is equivalent to 1,000 bytes of memory. A standard A500 is equipped with 512K of memory.

Mb: A megabyte is a unit of memory, equivalent to a million bytes. A byte can hold a single alphanumeric character, or can be used to store numbers between 0 and 255.

RAM: Random Access Memory, so called because any part of it can be accessed randomly, thus immediately, rather than having to search through from the start of memory in a linear fashion to the point of interest. RAM is used to hold programs while they are being executed and to hold temporary data. The contents of the computer's RAM are lost when the power is switched off.

Win a hard drive

Now it's time for us to ask you some questions, but you can win one of two £500 hard drives. Just a few easy answers and all this storage power could be yours for the taking...

Those awfully nice people at Surface UK Ltd, purveyors of the finest Amiga hardware and software, have put up a choice of two fabulous hard drives worth £500 each just waiting to be won.

First up, for all you A500 owners out there, is the 40Mb SupraDrive 500XP. It features a SCSI interface, 0.5Mb of RAM built in, expandable up to 8Mb, and Amiga bus pass-through and all the software you need to get it going.

Or, if you've got an Amiga 2000, you'd certainly be interested by the SupraDrive WordSync 2000 autobooting hard disk card. It uses a high-performance Quantum hard disk, includes a SCSI port, utility software and has a whole 40Mb capacity.

You've been given a choice because not all hard drives will go with all Amigas, so don't forget to tell us which one you want to win by marking the entry form.

SupraDrive 500XP



Just think, 40Mb of storage space with an extra 0.5Mb of RAM expandable to 8Mb all for free.

your Amiga, but into which of the many available slots do you opthe plug it?

- a) In the expansion port.
- b) In the serial port.
- c) In the parallel port.

Question 4

What is the most likely application of a hand scanner?

- a) For parents worried about the cleanliness of their children's hands before mealtimes.
- b) For fingerprint detection in a computerised security system.

- c) For digitising images for inclusion in pages produced with a DTP package.

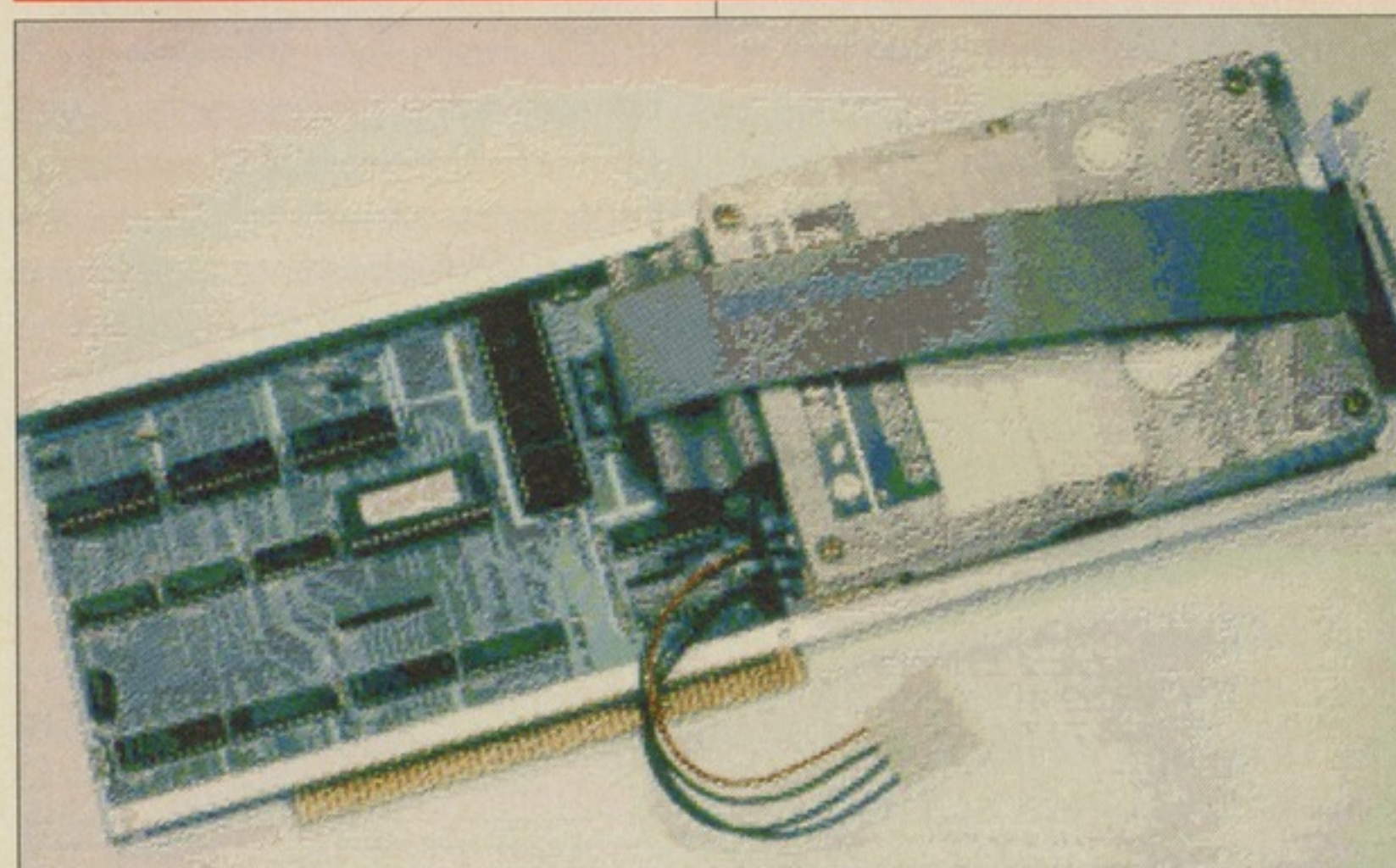
Question 5

How many bits (binary digits) are there in a Megabyte?

- a) 1,000,000.
- b) 1,024.
- c) 8,000,000.

Just one big hint for any of you feeling stumped: all the answers to these questions can be found lurking in the pages of this supplement, so get searching! ■

SupraDrive WordSync



Or, if you've got an Amiga 2000, how about this 40Mb number, featuring Quantum hard disk and SCSI port?

OK, here's what you have to do to win. First, just answer the following five easy-peasy questions by ticking the appropriate box on the entry form below. After that, it's 'thinking caps on' time folks for the inevitable tie breaker.

In ten words or fewer, tell us how you would make *Express* even better. The most useful and imaginative suggestion clinches it.

And please don't forget to indicate which computer you own so we can sort out the right prize for you. Anyway, that's enough of the formalities – let's get right on with the show...

Question 1

Whereabouts would you look (if you were so inclined) for

an FD file?

- a) In the DEVS: directory of the Workbench disk.
- b) Hiding away in the bootblock of a virus-infected disk.
- c) On the Amiga Extras disk.

Question 2

The letters CLI are an abbreviation. What do they stand for?

- a) Command Line Interface.
- b) Computer Linguistic Input.
- c) Come Look Inside.

Question 3

You've just bought a spanking new modem for

ENTRY FORM

Tick the appropriate boxes:

- | | | | |
|------------|----------------------------|----------------------------|----------------------------|
| Question 1 | a <input type="checkbox"/> | b <input type="checkbox"/> | c <input type="checkbox"/> |
| Question 2 | a <input type="checkbox"/> | b <input type="checkbox"/> | c <input type="checkbox"/> |
| Question 3 | a <input type="checkbox"/> | b <input type="checkbox"/> | c <input type="checkbox"/> |
| Question 4 | a <input type="checkbox"/> | b <input type="checkbox"/> | c <input type="checkbox"/> |
| Question 5 | a <input type="checkbox"/> | b <input type="checkbox"/> | c <input type="checkbox"/> |

I would make *Express* even better by:.....

I own an: Amiga 500 ☐
Amiga 2000 ☐

Cut out this form, stick it to a postcard or the outside of an envelope and sent it to: Hard Drive Competition, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW

AMIGA 500 MAMMOTH 1/2 MEG UPGRADE

LATEST DESIGN INCORPORATES 'CHIPMEN' OPTION AT NO EXTRA COST!

- Increases computer memory from normal 1/2 megabyte to 1 megabyte
- Includes disable switch/incorporates high quality silver coated pin connector
- 16 bit technology
- Fit in minutes
- Direct replacement of Commodore A501 expansion
- Includes "CHIPMEM OPTION" - Phone for details
- 12 month warranty
- In stock now!

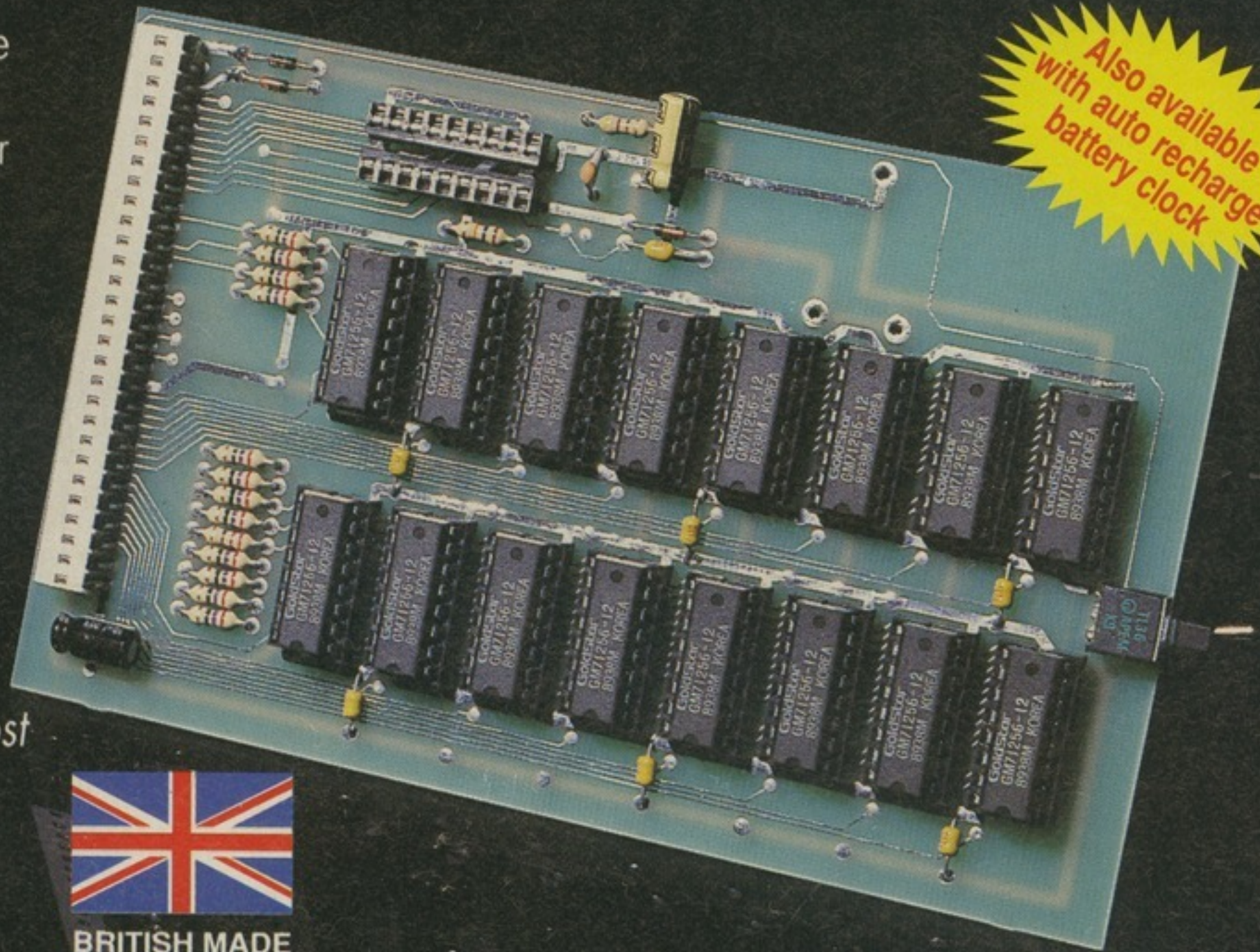
£29.00

Price includes VAT and post and packing

Tel: 0582 491949



BRITISH MADE



Also available
with auto recharge
battery clock

Send order with payment to:

WTS ELECTRONICS LTD, Chaul End Lane, Luton, Beds LU4 8EZ



AMIGA REPAIRS JUST £44.95 inc.

VISA

- ★ Commodore registered
- ★ Over 10 years experience with Commodore computers
- ★ 20 qualified technician engineers at your disposal
- ★ We will undertake to repair your Amiga 500 computer for just £44.95 including parts, labour, VAT and post & packing
- ★ Most computers should be repaired within 24 hours of booking in.
- ★ Prices include full service check, overhaul, soak-test and replacement of power supply unit if necessary
- ★ Repairs to keyboard and disk drive also included (£25 extra if these units are unrepairable and require complete replacements)
- ★ All repairs covered by a 90 day warranty



**Upgrade your Amiga from 512K to 1Mb of memory for just £25.00
SPECIAL EXCLUSIVE OFFER:**
If you submit your computer to ourselves for repair, enclosing this advert along with just an additional £25, we will supply and fit a 512K memory expansion at no extra cost.

How to take advantage of this exceptional offer: simply send or hand deliver your machine to the workshop address detailed right, enclosing payment and this advert and we will do the rest. (If possible please include a daytime telephone number and fault description).

* If you require 24 hour courier to your door, please add £5 else your computer will be sent back by contract parcel post.

WTS ELECTRONICS LTD
STUDIO MASTER HOUSE, CHAUL END
LANE, LUTON, BEDS, LU4 8EZ
Telephone (0582) 491949 - (4 lines)

WTS reserve the right to refuse machines that in our opinion are beyond reasonable repair

Move Over 'Screengems' The New Official Commodore Amiga Pack is at Digicom



AMIGA
500

CARTOON
CLASSICS

Free 1 Meg
Worth
£99.00

NOTICE : The RAM upgrade supplied in this offer is the official COMMODORE A501 Expansion unit. Any other Expansion will invalidate your warranty. Should the fault be related in any way

The exciting world of graphics, animation and sound is at your fingertips with the Amiga 500. Cartoon Classics brings together a fantastic selection of Cartoon games and a paint package to create your own cartoons.

Amiga A500 Computer Keyboard
Built-in 1 Meg DS/DD disk drive
512K A501 RamExpansion
Latest Kickstart and Workbench 1.3
Notepad Mini word-processor
All necessary disks, manuals and cables
T.V modulator and Commodore mouse
4096 colour graphics, 4 channel stereo sound
12 months warranty on all items
Full U.K specification machine

Bart vs the
Space Mutants
The new 1 meg game



INCLUDING THESE NEW TITLES



This years biggest hit



AND OUR OWN EXTRAS PACK

Accessories

Mircoswitched joystick
Disk Library Case
10 Blank disks
High quality mouse mat
and dust cover

Five Game Pack

Turbo Outrun
Enduro Racer
Super Wonder Boy
Thunder Blade
Crackdown

A Top Title

Kick Off 2
1 Meg version
Voted European
Game Of The Year



Total Package Price
Including VAT & Delivery
Next Day Courier Delivery At £5.50 Extra

£399.99

CALL
NOW

Bart
Pack 1

Amiga Cartoon Classics Pack as above plus
Philips CM8833II Colour Stereo Monitor
plus leads and
dust cover

£639.99

Bart
Pack 2

Amiga and Monitor as in Bart Pack 1
Plus the STAR LC-200 Colour Printer
complete with
dustcover and
leads

£839.99

HOW TO ORDER

By Phone :

Call our credit card order line, and quote your credit card details to our helpful sales staff. We accept Access, Visa, Eurocard, Mastercard, AMEX and the new direct debit cards like Switch and Barclays Connect.

By Mail :

Simply write down the details of your order along with your name and address, then post it to us with a personal cheque, postal order, bankers draft or building society cheque made payable to, "Digicom Computer Services Ltd".

Personal cheques require time to clear before despatch

Prices and Specifications are subject to change without notice. Goods are not sold on a trial basis. E&OE.

DIGICOM

(0908) 378008

36-37 Wharfside

Fenny Stratford

Watling Street

Milton Keynes MK2 2AZ

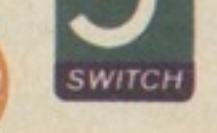
Showroom open Mon-Sat 9.00am-5.30pm

(closed between 12.30-1.30 pm)

Wharfside is opposite the Bridge Pub on the A5 Watling Street

Digicom offers you !

- ☐ Free Catalogue with all orders
- ☐ 12 months guarantee period
- ☐ All product tested before despatch
- ☐ Regular newsletters and special offers
- ☐ Technical helpline
- ☐ 30 day replacement of faulty product
- ☐ Price or product match
- ☐ Computerised order system



All
Major
Credit
Cards
Accepted